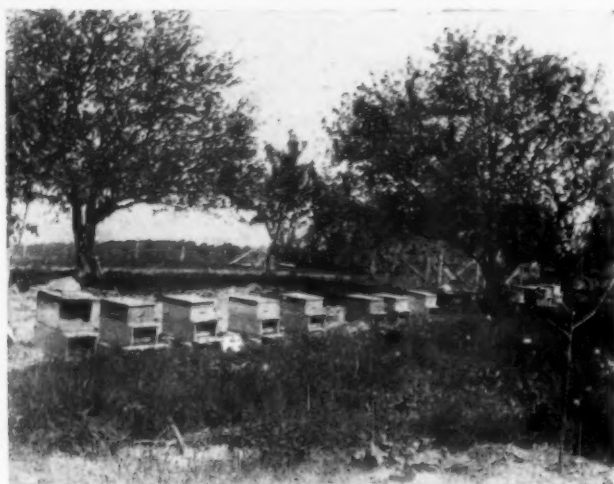


AMERICAN BEE JOURNAL



Aplary of CHAS. ALBERTS, Sun Prairie, Wis.



MR. ALBERTS and "CHARLIE"—(See page 58)



American Bee Journal



PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
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- 2d.—To protect and defend its members in their lawful rights.
- 3d.—To enforce laws against the adulteration of honey.

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terest to all. If so, we would like to have such write out their experiences for publication, and send them in. No doubt what you have read in the American Bee Journal has been a great help to you, so why not you add your mite to the general fund of information about bees?

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Nemaha, Co., Kan., July 15, 1905.

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Ontario, Canada, July 22, 1905.

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Washington Co., Va., July 22, 1905.

GEORGE W. YORK & Co.—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for \$1. Three Queens (without Journal) would be \$2.10, or 6 for \$4.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

A Great Bee-Book for Bee-Keepers

Every one who has bees, or is thinking of keeping them, should have a good bee-book. The one written by Prof. A. J. Cook, called

The Bee-Keepers' Guide; or, Manual of the Apiary

is a fine cloth-bound book of 544 pages. It gives in detail much valuable information about bees and the successful management. This book is in its 19th thousand, so it has had a large sale. It is also the latest edition. In connection with the Weekly American Bee Journal it is most helpful. It answers so many questions that constantly arise, especially among beginners, and that of course cannot be repeated in a bee-paper. Prof. Cook is a bee-keeper of over 30 years' experience. He is also a close student of nature, a scientist—in short, a man who has given his life to the study of bees and related subjects. You would wonderfully enjoy reading his book, and at the same time be greatly profited. Better have a copy of it.

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GEORGE W. YORK, Editor

CHICAGO, ILL., FEBRUARY, 1908

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Let Glucose Be Labeled Glucose

The name "glucose" is one not in good odor among the consuming public. The manufacturers of the stuff are well aware of this, and since the agitation of the pure-food question have styled it "corn syrup." The great glucose-manufacturing concern has changed its name to "Corn Products Co." The U. S. Chemist, Dr. W. H. Wiley, and members of the Pure-Food Board have ruled that glucose must appear under its true label, and the glucose crowd are making the most strenuous efforts to have this ruling reversed.

Let justice be done to glucose. If people want to buy it, the manufacturers ought to have the right to sell it; but when people buy it they should know that they are buying glucose, and not something that they suppose to be different, under the name of corn syrup. Gleanings has this to say on the subject:

"Dr. Wiley and his associates have stood for pure food, and have all along been strenuous in insisting that all food stuffs be so labeled as to convey no deception. The general public does not know that corn syrup, so called, is glucose; and to allow this change of name would be the grossest kind of deception—a thing that would be entirely out of harmony with the provisions of the national pure-food law under which Dr. Wiley and his associates are working.

"The glucose interests are alarmed, and they have good reason to be; for neither President Roosevelt nor Secretary Wilson has intimated that either one of them proposes to reverse the decision of their subordinates. They have simply signified their willingness

to hear argument pro and con; and therefore it means that, unless bee-keepers and all producers of honest pure cane syrups and sugars register a mighty protest, *at once*, against making any change, there is danger that the decision of the pure-food commissioners may be reversed.

"We are sure that the President, *provided* the full facts are put before him, will rule in the interests of the people and not in favor of private corporations and small retailers whose opinions would be biased by the profits arising from the sale of so-called corn syrups.

"We urge every bee-keeper, as soon as he reads this, to write immediately a concise letter to Dr. Harvey W. Wiley, of the Department of Agriculture, Washington, D. C., commending the course he and his associates have taken in ruling against the use of the words "corn syrup" for a product known as glucose. A short but expressive letter should be addressed to Secretary Wilson, Secretary of Agriculture, and to President Roosevelt, Washington, D. C., requesting both to sustain the action of the Pure-Food Board in placing a ban on corn syrup."

It certainly can do no harm, and it may do no little good, to write as thus indicated.

Varying Prices for Honey

There seems to be less stability in prices in Australia than in this country. The Commonwealth Bee-Keeper says that in 1895 honey was stacked up in Melbourne in thousands of tins, waiting buyers at \$1.25 to \$2.50 per tin; yet 5 years later honey brought \$6.25 per tin.

If a "tin" means a 60-pound can, that means the lowest price was about 2 cents a pound and the highest 10 cents. In any case, there was a rise in 5 years that made the price $2\frac{1}{2}$ to 5 times as much. Such variation is rather unsettling, but bee-keepers would not likely object providing the variation were always on the upward grade.

Is Bee-Keeping Profitable?

Replying to this question, The Commonwealth Bee-Keeper (Australia), page 80, says that in a first-class honey country bee-keeping is profitable so long as extracted honey brings 5 to $5\frac{1}{2}$ cents a pound. This conclusion seems to be based on the fact that in that country a few leading bee-keepers sometimes produce 30 to 40 tons, while a great many produce 10 to 20 tons. The editor thinks the man who produces less than 8 tons will not consider bee-keeping profitable with honey at 5 cents.

Ventilation of Hives in the Cellar.

Provision should be made for ventilation of each hive, and it does not matter so much just how that ventilation is obtained. In the days of box-hives the proper thing was to turn the hive upside down, leaving the bottom (now the top) entirely open. At the present day some leave the bottom entirely open by taking away the bottom-board, but the movable-frame hive is not turned upside down. Others secure just as good ventilation by leaving the bottom-board on with quite a contracted entrance, but this lack of ventilation below is made up by having ventilation above, the cover being slightly raised so as to leave a crack, or slid forward to leave a crack of $\frac{1}{8}$ to $\frac{1}{4}$ inch at the back. No doubt it would be all right to have the hive entirely open at the top and entirely closed at the bottom, for this would be practically the same as the old plan of turning box-hives upside down; only it would not be generally convenient to have the hive entirely uncovered, especially where hives are to be piled up. If hives are open only at the bottom or top, they cannot probably be too open. But the matter might easily be overdone if there be opening both at top and bottom, especially if the temperature in the

American Bee Journal

cellar average low, for the passage of air through the hive, caused by the two openings, would cool the bees more rapidly than if top or bottom were entirely closed.

Of late some advocate having a bottom-board 2 inches deep. They claim that in the cellar this is much the same as having the bottom entirely open, without the trouble of removing the bottom, while rightly managed it is also convenient for summer.

Selling Colonies of Bees Without Combs

Some years ago considerable business was done in this country at selling bees by the pound. Just a little in this line is the selling of what are called "naked colonies" in Germany. These sales, however, occur in the fall, and a queen accompanies the bees. In fact, each lot sold is a colony of bees with its queen, their combs having been taken from them for the sake of the honey and the wax. Those who buy them feed them up for winter. One man in Praktischer Wegweiser advertises 1,500 of these "naked colonies" for sale. He probably makes a business of buying them to sell again. From the middle of September to the end of October, he offers 4 to 5 pounds of Carno-Italian bees with a young fertile queen for \$1.00.

Brood-Rearing in and out of Cellar

Bee-keepers of experience have sometimes insisted that brood-rearing begins earlier in colonies wintered in cellar than in those wintered out. That perhaps is because their experience has been only with wintering in cellar, and they have reasoned somewhat after this fashion: Warmth is a necessary factor in brood-rearing; it is warmer in than out; therefore, breeding begins sooner in than out. In such matters observation is more reliable than reasoning, and observation in the spring easily shows that in general breeding begins outdoors sooner than in the cellar.

Naturally one seeks an explanation for this apparent contradiction. The explanation that has been given is itself something of a paradox. It is colder out than in; therefore it is warmer in a brood-nest outdoors than in one in the cellar. A little thought will show that there is nothing so very paradoxical about this. The heat in the brood-nest is always kept up to a certain temperature by the cluster as a sort of stove, the bees consuming the honey as fuel. In the cellar, where it is warmer, the fire burns low; outdoors, where it is colder, the heat of the stove must be greater; so outdoors the greater fire needed makes it warmer in the center of the cluster than in a cluster in the cellar.

Paper Receptacles for Honey

At a conversazione of the British Bee-Keepers' Association, as reported in the British Bee Journal, 433, "The secretary (Mr. Young) showed some vessels made from paper, which had been recently put on the market as receptacles for holding cream, and from all accounts were fairly solid and effective when filled. They were fitted with water-tight caps, which we believe were coated inside with

some preparation of milk albumen. He thought they would be of interest that evening, as it was quite possible to utilize them for conveying honey, although there was a possible danger (remote, perhaps) of the wad being blown out of place during transit if fermentation of the honey was set up. They could be produced at from \$7.50 to \$12.50 per thousand, but could be used only once, while at the same time they could be packed and sent away probably with less risk than was incurred with honey-jars made of glass."

Perhaps the paper caps are the same as those in common use in this country in milk bottles. They would certainly be thrown out by fermentation, but is that any real objection? If fermenting honey is put on the market, perhaps it is best it should be lost by an explosion. Then it will not spoil the market for careful producers.

White Italian Clover Inferior

Italian clover, known more commonly under the name of crimson clover, is now pretty well known, with its brilliant plumelike spikes of bloom, but it seems there is also a white variety lauded in the catalogs. Of this, A. R. Lockhart says in Gleanings, that planted side by side with the crimson, and with like advantages, the white was so late in starting that it was choked with weeds and almost a failure, the crimson being a success.

Basswood as a Honey-Yielder

G. M. Doolittle says in Gleanings, "I once had a colony which gave a yield of 66 pounds of basswood in 3 days, and 302 in 10 days." He further says:

"By going back over my account with my bees for the past 30 years I find that, from basswood alone, my yield of honey has been about 55 pounds on an average from each colony, each year. This is the average yield of the apiary, not the yield of an individual colony."

Many a bee-keeper would be well satisfied with an average of 55 pounds per colony for a series of years from all sources, whereas Mr. Doolittle can rely as well as others on white clover and several other good yielders. Certainly there is much in locality, and Mr. Doolittle is to be congratulated.

Comb and Extracted from Same Colony

Some have strongly advocated the advantage of having sections and extracting combs on the same hive at the same time. Whether or not it may be successful in some cases, it is at least certain that it may be a failure in some cases, as reported by G. M. Doolittle, in the Bee-Keepers' Review. He says:

"I have tried just that plan several times, varying it each time to see if I could not overcome the difficulties which presented themselves at every trial, and I will say frankly, that I have not succeeded in producing a single section of 'fancy' honey when so working; and only a very few that would grade as

No. 1; that is, at any time when the extracting super and the sections were on the hive at the same time.

"It is correct that, by putting an extracting super on the hive as soon as the colony becomes populous enough to enter the same, the bees will at once take possession of the combs therein, but it is not correct that the bees will begin work in a super of sections, to any advantage, until the combs in that extracting super are nearly or quite filled, no matter how much crowded for room the colony may be.

"Empty comb in an extracting super, and section honey, do not go together any better than does poultry, at liberty, and a bed of ripe strawberries. The honey will all go into the empty combs every time, no matter how many sections filled with foundation there are between that extracting super or empty combs and the brood-chamber below; and, with all of the skill at my command, I have never been able to overcome this difficulty."

He also adds that if the extracting combs are old, the cappings of the sections will be darkened by the bits of dark material carried from the extracting-combs.

Comb Honey Versus Extracted

E. D. Townsend, in the Bee-Keepers' Review, tells about trying side by side for a number of years colonies producing comb honey and others producing extracted, and says:

"After these years of comparison of results between colonies worked for comb honey, and those worked for extracted honey; we (the boys and I) have come to the conclusion that, after the yards are established, we can work three yards for extracted honey, with the same labor that it requires to work one yard for comb honey; and harvest just as many dollars' worth of honey, from each of the extracted yards."

Editor Hutchinson adds this:

"Leonard Griggs, of this place, runs three apiaries, and has been producing both comb and extracted honey, and, last fall, he told me most emphatically, that he was going to cut out comb honey, as he found that it cost him three times the labor, besides making a complication in the management."

This should cause the man who has never tried producing anything but comb honey to do some thinking. It does not necessarily follow, however, that every bee-keeper can make three times as much with extracted as with comb. There are many intelligent bee-keepers who have had experience in producing both kinds of honey, who yet continue producing comb honey in part or wholly. They would hardly do so unless in their locality and under their conditions there was money in doing so. "Let each man be fully assured in his own mind."

Feeding Bees in Winter

The wise bee-keeper will seldom have occasion to feed bees in winter; if very wise, never. For he will take care in advance that there shall be not only a plenty but an abundance of food in the hives to last through the winter, and

also through the spring as well. The inexperienced, however, is likely to be caught with some colonies having so little winter provision that he fears starvation. However bad feeding in winter may be, death from starvation is worse. So if danger of starvation is feared, better feed at once. Especially toward spring will these occasions arise.

After bees get to flying daily one need not be so very careful what or how one feeds; almost anything sweet may be fed if the bees will take it, if it be not absolutely poisonous. But so long as confinement continues, in some places well into April, the better the feed and the less the disturbance the better chance for the bees.

An outside, empty comb can be taken out, and the adjoining combs moved back until the cluster of bees is reached, and a heavy comb of sealed honey placed next the cluster, and the hive then closed. If this be quietly done, the disturbance will do little harm.

Unfortunately, those who have bees likely to starve in winter are not likely to be so provident as to have on hand a stock of sealed combs. Granulated sugar in the form of candy may be used. A cake of hard candy, made simply as when made for children to eat, of any convenient size and $\frac{3}{4}$ to $1\frac{1}{4}$ inches in thickness, may be laid on the top-bars and covered over. Some prefer Scholz or Good candy, made by kneading powdered sugar with a small amount of extracted honey into a stiff dough.

While feeding above is generally advised for winter, where bees are cellared, and where there is a deep space under the bottom-bars, as is now becoming more or less common, it may be much better to feed below. One reason for this is that there is no disturbance from uncovering the bees; even if the hives are piled up 5 or 6 high, the feed can be put under the bottom-bars without taking down a hive. Another advantage from feeding below is that there is no danger of the candy becoming soft and dripping down upon the bees, as sometimes happens when it is put over the top-bars, although if put in a wooden butter-dish there is little danger. Even if one has combs of sealed honey, it may be much better to shove one under the frames—certainly it is much easier—than to open the hive to put the comb in, especially if the hive to be opened has 3 or 4 others piled on top of it. If necessary, something must be under the comb to raise it up so it touches the bottom-bars. The same may be said of candy, whether given in or out of a dish. An especial advantage, when using a dish, is that the feed is toward the bees in feeding below, whereas when feeding above, the bees have the bottom of the dish next to them.

However the feeding be done, one must see to it that the bees get to the feed, and with a weak colony the bees may go up to it more readily than down. Generally, however, it is better to have only strong colonies to winter.

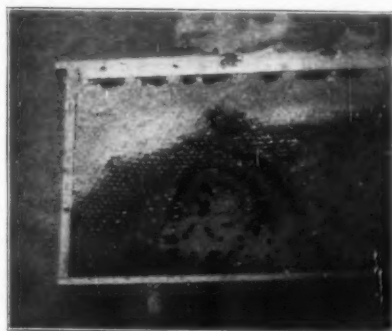


Reports on Bees and Honey Crop

As these are still coming in, we thought it best to wait until the March number before publishing them. Also, there is so much other important matter on hand just at this time that we think it may be as well to wait until next month before giving place to the reports on bees and honey that were called for in the December number.

Queer Place for a Queen-Cell

Bees generally prefer to build queen-cells on the lower edges of combs or on some part where there is a hole in the comb or some break in its regular surface. Occasionally they build a cell upon



an end-bar or some part of the frame entirely detached from the comb. The illustration shows a queen-cell on the under surface of a bottom-bar, all the more detached from the combs because the bottom-bars were $1\frac{1}{8}$ inches wide.

The picture herewith was sent to us by Dr. Miller. It shows how bees sometimes build queen-cells in his "locality."

Detroit Secures the National Convention

Secretary Hutchinson, of the National Bee-Keepers' Association, sends this notice:

EDITOR YORK:—By a unanimous vote, the Executive Committee of the National Bee-Keepers' Association, has decided to hold the next annual convention in the city of Detroit, Michigan. The exact date has not been decided, but it will be after the hot, dusty, busy season has passed, and before the cold of winter has come—in those glorious days that come only in the autumn.

The National Association has met in Detroit only once, nearly a quarter of a century ago, but that meeting was well attended—practical, enthusiastic and harmonious.

The majority of bee-keeping special-

ists, those who attend conventions, live in the northeastern part of the United States and Canada, and Detroit is very nearly the geographical center of that district. It is easily reached from the middle South, from the East, from the middle West, and from Ontario, hence a great crowd of practical men can be gathered at that point.

W. Z. HUTCHINSON, Sec.

New Bee-Bulletin

Through the kindness of Dr. E. F. Phillips, we have received from the Department of Agriculture at Washington, D. C., a new Bulletin, No. 75, relating to bee-culture. It is in two parts. Part I. is devoted to "Production and Care of Extracted Honey," by Dr. E. F. Phillips, and "Methods of Testing for Bee-Keepers," by Dr. C. A. Brown. Part II. is devoted to "Wax-Moths and American Foul Brood," by Dr. Phillips. This Bulletin may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at the price of 5 cents for each part. All remittances should be made payable to him. Stamps, personal checks, or foreign money will not be accepted in any case.

Decision as to Guarantee of Honey

There has been some question, since the coming in of pure-food laws, as to who is the responsible party in cases where honey passes through several different hands. Attorney-General Bonaparte has issued a decision, in response to a request from the U. S. Secretary of Agriculture, that may be considered conclusive. He takes a particular case as a type of the class, and says:

"An examination having been made in the Bureau of Chemistry, in accordance with section 4 of the act, of a sample of food purchased from a retail dealer in the District of Columbia, and the food having been found to be adulterated, the dealer was cited for a hearing, and, having appeared, established as a defense under which he claimed protection a written guaranty, conforming to the requirements of section 9 of the act, from a Maryland wholesaler who had sold him the food and shipped it to him in the District of Columbia in the exact condition in which he sold it here.

"The Maryland wholesaler, having been then cited, in turn appeared, and established a similar guaranty, under which he also claimed protection, from a Pennsylvania manufacturer who had sold him the food and had shipped it to him in Maryland in the exact condition in which he had, in turn, guaranteed it

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and shipped it to the retailer in the District of Columbia.

"The question upon which my opinion is requested is whether, upon such state of facts, the Maryland wholesaler is amenable to prosecution for violation of the act, or is protected by the guaranty from the Pennsylvania manufacturer?"

He decides that the guaranty of the Pennsylvania manufacturer affords complete protection to the Maryland wholesaler, the case being an interstate sale, and the Pennsylvania man being a resident of the United States. Moreover, the Maryland wholesaler is not subject to prosecution by reason of the guaranty he gave the District of Columbia retailer. But he says:

"I should add, however, that the fact that both the District of Columbia retailer and the Maryland wholesaler are protected from prosecution by the guaranties which they have established from their respective vendors, does not, in my opinion, exempt the adulterated food from confiscation under section 10 of the act, which provides, *inter alia*, that any adulterated or misbranded food or drug which is being transported in interstate commerce for sale, or, having been transported, remains unloaded, unsold, or in original, unbroken packages, or is sold or offered for sale in the District of Columbia, may be proceeded against in the district where found 'and seized for confiscation by a process of libel for condemnation.' The provision of section 9 that no dealer shall be prosecuted when he establishes a guaranty from his vendor merely affords protection, in my opinion, against criminal prosecution, fines, and other penalties to which the dealer would otherwise be personally amenable, and does not in any way affect the liability of the merchandise to confiscation under the provisions of section 10."

This decision seems to be common-sense, leaving the matter as it should be. If a dealer were to have no protection against criminal prosecution, fines, and other penalties when handling honey in original packages, there would be a hindrance to trade, for he could not dare to handle anything concerning whose purity he was not absolutely certain. The danger of the smaller evil, confiscation, will merely make him careful to buy only of responsible parties.

Bee-Inspection Law of New Mexico

George Eversole has been appointed bee-inspector for Precinct No. 8, Flora Vista, by the county commissioners, under the provisions of the bee-law, passed by Mr. Eversole's efforts and those of Representative Price Walters. The law will be strictly enforced by Mr. Eversole, and is as follows:

CHAPTER 30.—An Act relative to the inspection and creating the office of inspector of bees. H. B. No. 105; Approved, March 16, 1907.

Be it enacted by the Legislative Assembly of the Territory of New Mexico:

Section 1.—Upon the written application, under oath of any five actual bee-keepers, residing in any precinct in this Territory, alleged upon information and

belief that the disease known as Foul Brood or any other contagious or infectious disease, exists among the bees in said precinct, or that infected articles are kept in said precinct, and that there is danger that such disease will spread to other apiaries, being made to the chairman of the board of county commissioners of the county in which said precinct is located, the said board, shall appoint some competent, actual bee-keeper, residing in said precinct, to be precinct inspector of bees; and the applicants shall state, in this application, the names of the actual bee-keepers of the precinct, so far as known to them.

Sec. 2.—The person so appointed shall within five days after his appointment, file with the clerk of such board, his written acceptance of the office, and the usual oath of office; or in default thereof, the board shall, in the same manner, make new appointments, until the said office is filled. The inspector shall hold office during the pleasure of the board, and until his successor is appointed and qualified.

Sec. 3.—Every bee-keeper or other person who shall be aware of the existence of Foul Brood, either in his own apiary or elsewhere, shall immediately notify the inspector of bees, if there be one, of the existence of such disease, and in default of so doing shall, on summary conviction before a justice of the peace, be liable to a fine of five dollars and costs.

Sec. 4.—On receiving notice from any source of the existence, in any apiary in his precinct, of the disease known as Foul Brood, or any other infectious or contagious disease of bees, the inspector of bees shall forthwith inspect each colony of bees and all hives, implements and apparatus, honey and supplies on hand or used in connection with such apiary, or otherwise distinctly designate each colony and apiary which he believes infected, and notify the owner or person in charge of said bees thereof, in writing or otherwise, and the owners of said bees, or the person in charge thereof, shall, within five days thereafter, practically and in good faith, apply and thereafter fully and effectually carry out to and upon said diseased colonies, such treatment as may have been prescribed by the inspector for such cases; also thoroughly disinfect to the satisfaction of such inspector all hives, bee-houses, combs, honey and apparatus that have been used in connection with any such diseased colonies; or, at his election, the said owner or person in charge of such bees may, within the same time, utterly and completely destroy said bees, house, comb houses, honey and apparatus, by fire, or bury the same in the ground, with a covering of not less than two feet of earth.

Sec. 5.—After inspecting infected hives or fixtures, or handling diseased bees, the inspector shall, before leaving the premises or proceeding to any other apiary, thoroughly disinfect his own person and clothing, and shall see that any assistant or assistants with him have also thoroughly disinfected their persons and clothing.

Sec. 6.—The inspector shall have full power, in his discretion, to order any

owner or possessor of bees dwelling in box hives in apiaries where the disease exists (being mere boxes without frames) to transfer such bees to movable frame hives within a specified time, and in default of such transfer, the inspector may destroy, or order the destruction of such box hives and the bees dwelling therein.

Sec. 7.—Should the owner or possessor of diseased colonies of bees, or any portion of said colonies, be they queens or workers, or of any affected appliances of bee-keeping, knowingly sell or barter such diseased colonies or portion of colonies, or infected appliances, he shall on conviction before any justice of the peace, be liable to a fine of not less than fifty dollars (\$50) nor more than one hundred dollars (\$100), or to imprisonment in the county jail for any term not exceeding two months.

Sec. 8.—Should any person whose bees have been destroyed or treated for Foul Brood sell, or offer for sale, any bees, hives, or appurtenances of any kind, after such destruction or treatment, and before authorized by the inspector to do so, or should he expose, in his bee yard or elsewhere, any affected comb honey, or other infected thing, or conceal the fact that such disease exists among his bees, he shall, on conviction before a justice of the peace, be liable to a fine of not less than twenty dollars (\$20) nor more than fifty dollars (\$50), or to imprisonment in the county jail for a term not exceeding two months and not less than one month.

Sec. 9.—When an owner or possessor of bees shall disobey the directions of the said inspector, a justice of the peace, may upon the complaint of the said inspector, cause a sufficient number of special constables to be sworn in and such special constables shall proceed to such owner or possessor and assist the inspector to seize all diseased colonies and affected appurtenances, and burn them forthwith; and if necessary, the said constables may arrest the said owner or possessor and bring him before a justice of the peace, to be dealt with according to the provisions of the preceding section of this act.

Sec. 10.—Before proceeding against any person before any justice of the peace, the said inspector shall read over to such person the provisions of this act or shall cause a copy thereof to be delivered to such person.

Sec. 11.—The said inspector shall include in his annual report to the board a statement of his work during the preceding year, which statement shall include: First, the number of colonies inspected; second, the number of colonies diseased; third, the number of colonies destroyed by fire or otherwise; fourth, the names of the owners, and the localities where found; fifth, the amount paid him for his services, and expenses for the preceding year.

Sec. 12.—All acts and parts of acts in conflict with this act are hereby repealed.

Sec. 13.—In the opinion of the Legislative Assembly an emergency exists, and this act shall take effect from and after its passage.

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The National Convention Report

This Report for 1907, of the Harrisburg convention of the National Bee-Keepers' Association, is on our desk. It contains 120 pages in all, and has the Constitution, names of members, list of bee-keepers' associations, financial report, etc. There was in the treasury Nov. 1, 1907, \$668.49.

A copy of the Report is mailed to every member of the National. If you are not now a member, send \$1.00 to Treasurer N. E. France, Platteville, Wis., who will send you a receipt covering one year, and also a copy of the 1907 Annual Report. The latter alone is well worth the dollar.

Mercy in a "Fine" Comb

Referring to Dr. Miller's comment on "Mercy in the Comb," on page 9, Hon. Eugene Secor, of Forest City, Iowa, says this:

"In regard to Dr. Miller's answer to that conundrum, if he means a *fine* comb, I agree with him that it represents mercy."

We don't know but what if this affair is allowed to go any further, some one will be trying to get into Dr. Miller's hair with a "fine"-tooth comb! And then it would be very clear where "mercy" is. At least, there might result a cry for mercy, if the comb-operator were not very gentle. And yet, we wouldn't have any one think that Dr. Miller needs a fine-tooth comb run over his head for "extracting" purposes, as we remember having seen in the East years ago—no personal experience, however.

Northern California Convention

The Northern California Bee-Keepers' Association will hold its 4th semi-annual convention in Pioneer Hall, 7th St. between J and K, Sacramento, Calif., on Feb. 19 and 20, 1908. The sessions will be at 10 a. m., 1 p. m., and 8 p. m. The objects of this association are the promotion and protection of the interests of its members. Headquarters at the Western Hotel. All bee-keepers are cordially invited to attend.

F. JAY LEWIS, Pres.

B. B. HOGABOOM, Sec.-Mgr.

"Songs of Beedom"

This is a pamphlet, 6x9 inches, containing 10 songs (words and music) written specially for bee-keepers, by Hon. Eugene Secor, Dr. C. C. Miller, and others. They are arranged for either organ or piano. The list includes the following: "Bee-Keepers' Reunion Song;" "The Bee-Keeper's Lullaby;" "The Hum of the Bees in the Apple-Bloom;" "The Humming of the Bees;" "Buckwheat Cakes and Honey;" "Dot Happy Bee-Man;" "Bee-Keepers' Convention Song;" "The Busy, Buzzing Bees;" "Spring-Time Joys;" and "Convention Song." The pamphlet is mailed for 25 cents, or sent with the American Bee Journal one year—both for only 60 cents. Send all orders to the American Bee Journal, 118 W. Jackson, Chicago, Ill.



Conducted by EMMA M. WILSON, Marengo, Ill.

Cleaning Separators with Lye.

In Miss Wilson's article in "A B C of Bee-Culture," on cleaning fixtures with lye, she doesn't give any formula as to how much lye to use for a given quantity of water. Can you? As lye is a poison would there be any danger to the bees? and do the bees object to the fixtures treated in this way? Do you follow the plan of cleaning articles in this way? It looks good to me, for the separators are pretty flimsy to scrape much.

W. S. P.

As I am the culprit Dr. Miller has turned the question over to me. It is true that I did not give any formula as to amount of water and lye used, because I did not have any myself. I used a large iron kettle that would hold several pails of water over a fire out-of-doors. I filled the kettle perhaps 2-3 full of water, and when boiling hot added 2 or 3 cans of concentrated lye, as we had about 3000 T-tins to clean. The lye must be added very gradually, or it will cause the water to boil over. It is not very particular just how much you use—we are never very saving of the lye; the only thing needed is to have it strong enough to remove quickly all the propolis, and as the T-tins are thoroughly rinsed in clear cold water, there is no trace of lye left on them. They look like new tins.

Yes, we always clean our tins in this way. We have never used it to any great extent in cleaning wood, although we have cleaned both supers and separators, and the bees never seemed to object.

So far as removing the propolis was concerned, it was a success; but the separators curled badly in drying. Of course, this difficulty might have been overcome by putting them in a press; but as new ones were not very expensive we preferred to buy new rather than fuss cleaning the old. In case of fence separators it is different, as they are too expensive to throw away; and, although I have not tried it, it is pretty certain that they will not curl as the plain separators did.

The plain separator is simply a very thin piece of wood, 3½ inches wide, and, without any restraining influence will curl much as a piece of paper would; and the wider the separator the more chance to curl. The parts of the fence are narrow, giving less chance to curl, and they are held in place by the cross-pieces.

It would be an easy thing to pile evenly in a pile a lot of fences after cleaning them, laying a weight upon them; and, if allowed to remain thus

until perfectly dry, it would seem they should be just as straight as when new.

Of course, glued separators could not be cleaned in this way; but I understand the fences are now nailed, so they can be dipped in hot water or lye without injury. One great objection to the fence separator has been the difficulty of cleaning it properly; and if this can be done away with it will be a big item.

Don't put too many either of the separators or T-tins in the kettle at a time, for there must be room for them to be moved about a little. This can be done with a four-tined pitchfork, slowly stirring them up and down, so that the lye can get to all parts, and so that the movement shall wash off the loosened propolis.

If the lye is strong enough, a very few minutes will suffice to clean them thoroughly, and they can be lifted out with the fork into a tub of clear rinsing water, then out of the rinsing water in the same way; if separators, piled up to dry as before suggested; if T-tins, allowed to drain until dry.

Whenever the solution acts too slowly, more of the concentrated lye must be added, and water must also be added as fast as needed. See that the water is kept hot all the time.

Bee-Keeping for Women.

The editor of the American Bee-Keeper—his name is Harry E. Hill—whatever may be his characteristics in other respects, is decidedly lacking in gallantry toward the fair sex. He publishes an article "clipped from the Sunday supplement of some of the large city dailies," the article being written by a lady, and then he—a mere man—comments upon it in such way as to throw doubt upon the reliability of the statements.

One of the statements is that, "As to the profits obtainable from one hive, bee-keepers generally agree that it should not be less than \$15.00 a year, and as to the number of colonies that can be cared for by one individual, the following is quoted 'from the experience of a woman who has succeeded in the business':

"After two years I gave up my position and devoted my whole time to my bees, except in the cold winter months, when what I found to do would make another item. That was the beginning. Now I have more than 500 colonies of bees—as many as I can care for properly, and do all of the work myself.

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except sometimes during the swarming season."

Upon which that man Hill thus comments:

"The reader's attention is especially invited to the concluding paragraph, where the energetic lady almost unassisted, takes care of 500 colonies, which, according to 'bee-keepers generally,' should yield \$15 a year each. This, then, gives the lady an annual return of \$7,500. Who wouldn't harken to the 'Call of the Wild?'"

He might about as well have said in plain terms that he didn't believe that an average of \$15 a year could be netted from each colony, and that 500 colonies was rather an over-estimate as the number to be cared for by one individual, except sometimes during the swarming season, nor to make so much clear from each one, but a woman—

The spirit of that editor is also shown in another way. The writer says:

"The limited space of this article will not allow me to go into details of marketing, size of packages and prices, but I will gladly answer by letter all inquiries sent me on the subject."

And then Mr. Hill doesn't give the least hint as to the address of the lady, well knowing that thousands of us sisters will be just dying to get "details," without which we may fall just a little short of reaching that \$7,500 a year.

Seriously, it is amazing that our great dailies, with all the talent displayed in their conduct, should so often print such stuff as they sometimes do under the guise of information about bees. All that seems necessary is for some man—latterly oftener a woman—to go and spend an hour or a few hours interviewing a bee-keeper, that being all the preparation necessary to give information regarding the entire business; or at least all except a few details that the well-informed correspondent will, upon inquiry, gladly answer by mail.

In most cases these reporters must be 'prentice hands. What reporter of real experience would solemnly give us facts—statements that would allow the plain deduction that there is a woman who clears from her bees annually \$7,500? At least, if there be such a woman, why not give her name and place of abode?

Perhaps, after all, it is well to print such things, they are so amusing. Take this: "Before extracting the honey a preliminary puff of smoke is sent into the hive." That is, before beginning to turn the crank of the extractor, the operator must each time run out and send a preliminary puff of smoke into the hive. Or, would it do to have a hive in the extracting-room for the express purpose of being puffed into, thus saving travel?

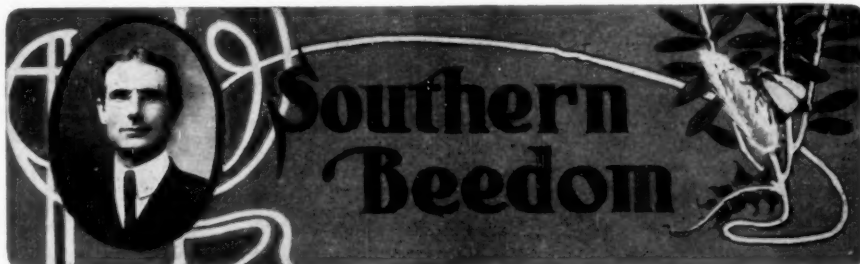
The picture accompanying this article is funny, very funny. A lady stands over a hive holding a comb in her hand, the cover still on the hive, all but the middle board, upon which Editor Hill comments: "Note how the magic hand of the fair apiarist simply rips the ridge-board from a gable cover and extracts the brood-frame without even removing the lid."



A WOMAN BEE-KEEPER WHO MAKES \$7500 A YEAR.

Plainly, the bees in the case are of the kind that do not sting, for the lady operator is dressed as if about to make a call, wearing a veil in up-to-date style, the veil leaving bare the entire neck and the back of the head. But a

lady capable of clearing \$7,500 a year from her bees—why shouldn't she be equal to the task of training them so they would never think of stinging one on the bare neck, or to show such disrespect as to get into one's back hair?



Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Three-Band Italians and Other Races of Bees

After trying all the leading races of bees, the "good, old three-banded Italians" have proven themselves the best all-purpose bee. They are industrious, and are, as a usual thing, of a remarkably even temperament, so they can be handled readily with little smoke. They defend their homes remarkably well, and especially against the wax-moth. They are adapted to a greater variety of conditions than any other race of bees, hence they are the best bee for the beginner to select.

CAUCASIAN BEES.

The Caucasians received much attention and comment, some time past, which has been dropping off somewhat. They were tried by a great many persons, but, as to being better than our other races, definite proof is wanting. They are, undoubtedly, very gentle bees, in their purity, although some reports to the contrary have been received. Although adapted better to colder climates than the Italians and other Southern races, I doubt whether they will prove themselves better as all-purpose bees than the three-banded Italians.

HOLY LAND BEES.

These bees have proven better in localities with more than one honey-flow, on account of their constant alertness and continuous breeding as long as

there are sufficient stores in the hives. The Italians lack in this, in that they are excellent for one honey-flow when they do their best, but after which they slow down in breeding, clog the brood-nest with stores for winter, and become too weak for any flows later.

CYPRIAN BEES.

The Cyprian bees have been tried thoroughly enough. They are called "Cyp." for short. This ought to have the same meaning as "Zip," for that's the way they go at the operator. In most respects they resemble the Holy Lands, only that the "Cypros" are still more nervous, and always easily aroused to battle, which makes them too "stingy" for me. They are good comb-builders, and great storers of surplus honey, capping the combs rather whiter than Italians.

This race of bees holds the highest record of honey stored by one colony, nearly a thousand pounds in a single season. However, I believe that the Italians can, by proper and careful breeding, be brought up to a strain that can not be excelled by any other, as an all-purpose bee.

Cotton as a Honey-Plant

The great plantations of cotton in the Brazos River valleys furnish a source for a good number of apiaries. The yield is quite certain every year, beginning in July and lasting until frost

in the late fall. The honey is very light in color, and of a good flavor—a distinct one of its own—which, in the very ripe honey, is often pronounced “to taste just like candy.” Especially is this true of the granulated ripe cotton honey. It then is very white and fine-grained.

Whenever I have had a crop of pure cotton honey from the “Bottom” apiaries, there was no trouble selling everybody some of it, who had tasted of it before. It *must be ripe*, though.

When first gathered it is very thin and clear. The flavor of this raw nectar is strong, nauseating, and tastes decidedly like the sap of the cotton-plant itself. This is lost, however, in the process of evaporation, that takes place in the ripening of the nectar, and is not noticeable in the thoroughly ripe product. During this evaporation, in a heavy flow from cotton, there is a strong smell in the apiary, just as that from a lot of cotton leaves that have been rubbed to pieces, so strong is the cotton odor in the nectar. I remember seasons when this odor was so strong and nauseating that it had a sickening effect on the apiarist; on calm days even prohibiting his operations. When there is a breeze the odor is driven off, and can be noticed several hundred yards from the apiary.

It is not a wonder that the nectar should so much resemble the sap of the plant, if we consider where the nectaries of the cotton-plants are located. Instead of the bees going inside of the flower to “fill up,” they rarely do so except when gathering pollen from the stamens of the flower. And as there is a large cluster of these in the great bell-shaped flowers, the bees become more or less covered with the pollen-dust. This is white in color, and it is an easy matter for the apiarist to tell at once that his bees are working on cotton.

Unlike most of our honey-yielders, the nectaries of the cotton are on the

of these, one under each of the sepals, the three leaflike bracts that enclose the lower part of the buds, flowers and the cotton-ball or pod. It is not necessary, even, for the cotton to come into



A COTTON BUSH.

bloom before bees can gather the nectar. When the buds are still closed, the nectaries under them, after a certain age, begin to secrete nectar before the flowers open.

Besides these there are nectaries under the large leaves of the cotton, situated one on each main rib of the leaf. In the large, well-developed leaves one such nectary will be found on each of the three ribs, while only one on the middle rib is found on many leaves. These are little indentations about midway along the ribs where a widening of the rib may be noticed. These are also protected from rains, being under the leaves, as those under the involucre of the buds, called “squares,” and the flowers, “blooms.”

“The nectaries being so close in proximity to the plant-body may be the reason the raw nectar is so like the sap of the plant itself.

Cotton is one of the main sources for surplus honey in Central and North Texas, and much cotton honey is produced each year. There are certain conditions necessary for a good yield from cotton. Rank growth during a wet season, on rich soils, together with moist, warm weather, are ideal for a fine flow. On lighter soil, and in dry seasons, the secretion is not so abundant, no honey being obtained from it in our sandy land districts at all. The soil and conditions also affect the color and quality of the honey materially. With the most favorable conditions above, the honey will be very white and clear, while the latter conditions produce a light amber honey.

Improving the Bees

Procure a few *good* queens of a good race of bees and use them for improving the bees you may already have. This is done by rearing young queens from the best of these, and using the others for drone-rearing. If, then, the undesirable drones from other colonies are kept down to a minimum, by leaving as little drone-comb in those hives as possible, and using entrance-guards or drone-traps at the entrances, a large percent of the young queens will be purely mated. Or the young queens may be taken, in small nuclei, to some “mating ground,” where no other bees fly except those from the colonies with the select drones, that have previously been brought there for the purpose. For all practical purposes, however, the first-named manner of procedure is the better, as it is less work and trouble, and a few mismated queens will do no harm. These can be weeded out gradually at any later time. Generally, such queens are better, anyhow, than those already in the yard.

I hardly believe it will pay to try to have all queens absolutely purely mated for honey-production alone, as it is very difficult and expensive to do this. Our desire should be, though, to have as good queens as we can possibly have, be they pure or only hybrids. I do believe, however, that after an apiary is once stocked with a pure race entirely, it is much easier to keep it at a better and more profitable level!

How I Lost in Two Apiaries.

To tell of one's successes and reverses as a means to amuse the world, is considered, I dare say, poor policy; but just for the sake of change, I will “top up the cart” along this line. The world cares little for one's successes or losses, but either will make good reading if properly put, and chronicling the latter might aid some one to steer shy of a similar circumstance. The past year was only a moderate one for honey with me, yet I lost severely on two of my apiaries, the rest attaining normality.

The spring of 1907 here was of the worst type. It rained practically every day for 6 weeks, and, moreover, the temperature was very low, keeping the bees indoors very nearly all the time. I began to feed April 10, and stopped June 5. I kept all my yards in good condition as to colonies, except one which we will notice presently. Just about June 8 conditions became right, and without notice I found myself in the midst of one of the greatest honey-flows I ever saw. I had one yard of some 60 colonies located in the midst of mesquite and horsemint on one side, and cotton on the other. This yard was getting ready for their honey to be taken by June 25.

In the meantime I had ordered a large shipment of bees from South Texas, and had been notified that the car of bees would start just at the time my bees would need to have their honey taken, or about June 25. The bees came June 29. I would not take the honey, expecting every minute to have to stop and see to the incoming bees.



COTTON LEAVES SHOWING NECTARIES.

outside of the flower. These are located under the involucre, that is, on the thickened portion of the flower where the stem stops. There are three

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To make a long story short, it was a matter of impossibility for me to get to the yard to take honey before July 4th and 5th. The result was a loss of one filling of nearly 3000 pounds of honey, estimating, of course, the time lost at the rate the bees were storing honey before and after they were robbed. A loss of a like amount occurred at my home-yard, due to ignorance, or possibly not doing just as I should have done. I had fed my bees for 3 weeks at home during the fearful weather spoken of above, and had a fine lot of brood at the time in the larval state.

I had a can of about 3 gallons of honey that was 2 years old, and just a little sour. It had been kept in a tin vessel and had grown very dark. The can had the appearance of being very rusty. I examined the honey as to its acidity and rust, and concluded that it was all right to feed to the bees. I put about 2 gallons of water

to the honey, made a thin syrup and upset it in the feeding-trough, and 2 hours later it was all in the hives. There were 85 colonies in this yard. Some 5 or 6 days later, upon examination, I found that practically all the brood had been aborted. There was no possible cause for the disappearance of this brood except feeding of this honey. When I washed the can it was bright, and showed no sign of rust. I have concluded that the honey was the cause of the trouble, and caused me to lose one "taking" of honey by not having bees at the right time. As a matter of course, a loss of 5000 or 6000 pounds of honey is better saved than lost, but it doesn't bother me any, when if I cared for my bees as they should be cared for at times I would have to lose out on my farms. With me something has "to burn" at times, and it may just as well be the bees as any of my other interests.

T. P. ROBINSON.

Bartlett, Tex., Jan. 16.

spring (the trying time) the clover is more apt to "heave," than is the case when there has been a covering of snow to keep out the frost.

With two poor seasons in succession it is to be hoped that there will be a change for the better this year. One thing is certain, any honey produced will be pretty sure to realize fair prices, as there will be no old crop carried over to affect this year's crop.

"Bees and Boys."

The above caption of an item in one of our local papers, at once reminded me of the story of the schoolteacher who told her class to compose a sentence in which the words, "boys," "bees" and "bears" would be used. One young hopeful handed in the following: "Boys bees bears when they go in swimmin'." However, the item in question referred to other phases of the "bees" business and is as follows:

"In many of the California apiaries boys are being employed almost altogether to take care of the bees. It is only in swarming time that other help is needed. After a little experience a boy can care for many hives, and it is said they are not stung as often as the men. It has been figured up that a farmer's boy who is given 5 hives of bees to begin with, and who will work industriously, can make more money in 10 years than his father can on a farm of 160 acres. Clover honey brings a good price, and the market is always short of it."

When such stuff as this is being circulated no wonder that there are many cases of "bee-fever" that end in disgust. It is a wonder all the farmers who have 160 acres do not abandon their farms and keep bees! By the way, it will soon be in order to look on the markets for California "clover honey," produced in apiaries managed entirely by "boys."

Millions in Honey.

"To the time-worn query, 'How doth the little busy bee improve each shining hour?' an official of the Apiary of the United States Department of Agriculture answered:

"By making enough honey in a year to load a train of freight cars which would extend in a straight line from New York to Detroit, and would have a cash value of \$25,000,000; that value being based on wholesale and not retail prices, too."

"Vast attention is being given by the Agricultural Department to teaching the army of bee-keepers in the United States—to get the best results. The startling statement was made that through the carelessness of this army of men and women more than 150,000,000 pounds of honey is lost annually, which could be saved if modern methods were adopted."

The foregoing, taken from the Montreal Herald, reminds one of "going away from home to hear news," as it is quite unlikely our American cousins are aware that they are wasting such a vast amount of honey by failing to adopt "modern methods." It is to be hoped, when they see this, that they will hasten



Conducted by J. L. BYER, Mount Joy, Ont.

Bee-Keepers and Bee-Papers.

It is often and truthfully said that every bee-keeper should take one or more bee-papers. At the present time there is not the slightest excuse for any Ontario bee-keeper not taking at least two bee-papers, as the terms on which they can be secured are about as near getting "something for nothing," as can be found in this world.

As an illustration: A few days ago a friend in Toronto enclosed \$1.00 and asked me to enroll him as a member of our York County Association, and also to send him a bee-paper. In reply I told him that the \$1.00 gave him a year's membership in our local association, and in the Ontario Bee-Keepers' Association, as well. In addition he will receive the Canadian Bee Journal one year, and his choice of one of 3 bee-papers published in the United States one year. No doubt my friend thought it was "bargain day," in the line of bee-papers; and don't you, dear reader, think so, too?

If any Ontario bee-keepers have not yet taken advantage of these extraordinary inducements, by all means do so at once, and help to increase the membership of the Ontario Association and at the same time share in the benefits and privileges of this organization.

Of course, it is owing to the Government grant that these concessions are possible, and as bee-keepers it is the least we can do, to show that we appreciate the interest taken in the industry. Any one remitting \$1.00 to the Secretary of the local association, will

be entitled to membership and privileges as stated; or send money to Sec. P. W. Hodgetts, Parliament Buildings, Toronto, and he will forward 50 cents to the Secretary of your local association. I am not positive as to whether all the local associations, give a bee-paper as a premium, but in every case the Canadian Bee Journal is sent by the Provincial Association. Write your Secretary, and in most cases you will find that an additional bee-paper will also be received.

Favorable Conditions for 1908.

Our friends in California and Texas are already talking of "prospects" for next season's crop. A little early yet here in Ontario to do much surmising, but conditions so far have been favorable. Although we have had no weather from Nov. 20 till now (Jan. 20), that bees could fly, yet weather conditions have been of such a nature that I hardly think a flight has been required. Only twice yet that the temperature has got down to zero, and while we have had as warm weather, yet the temperature has been, for our latitude, remarkably even and moderate. Bees outdoors seem to be wintering nice and quiet, and the 25 colonies in a cellar four miles from home, at my last visit appeared to be in good condition.

Clover looked well in the fall, and it has had a nice blanket of snow over it since Dec. 15. While alsike is rarely damaged much in the winter, yet with no snow on the ground the frost penetrates deep into the soil, and in the early

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to fall in line with "modern methods," and stop this awful waste at once.

Seriously speaking, I wonder if that \$25,000,000 worth of honey, is anything near a correct estimate of the value of a year's production of honey in the United States. While the statement seems to bear a semi-official stamp, yet it is proverbial that reporters often take liberties with figures, and as a rule are inclined to exaggerate rather than under estimate, especially so when anything pertaining to bees is being written up. If allowed to make a guess, I would be inclined to think that in this case there is no exaggeration, although \$25,000,000 at a wholesale price—say 7 cents—would represent about 360,000,000 pounds—truly a lot of honey—but divided among 700,000 bee-keepers, it would mean only a little over 500 pounds each.

As to the 150,000,000 pounds waste, I hardly think that claim to be tenable, as I believe there is no question, but that only a very small percentage of the bees in the United States and Canada are run by out-of-date methods. Still, the percentage may be much larger than the writer is aware of, yet I know that such is not the case as far as the Province of Ontario is concerned.

Bumble-Bees to the Philippines.

From the same paper I clip the following, relative to the sending of bumble-bees to the Philippine Islands:

"The Indiana bees recently shipped to the Philippine Islands by the Bureau of Entomology at Washington for the purpose of fertilizing clover in that country, were packed in small refrigerator baskets and placed in cold storage as soon as caught. They will be kept in cold storage until they arrive in the Philippines. Thus they were put to sleep in Indiana and will wake up in Manila."

Earlier in the season the writer noticed the Government's intention of shipping these bees, and quite often since, have I wondered as to the success of the venture. Of course, it is too soon to know as to the benefit the bees will be to the clover, but judging from New Zealand's experience, there is not much likelihood of any disappointment. As is well known, previous to introducing bumble-bees into New Zealand, it was impossible to raise any clover seed, but now, thanks to the bees' usefulness as pollinators, that country can produce seed equal to any in the world.

Carniolan Bees.

Perhaps no other prominent writer on apiculture has given the Carniolan race of bees as bad a name as has G. M. Doolittle at different times. He even condemns them as being slow to build up in strength for the honey-flow, and if there is any particular time when these bees "shine," more than at other times, it is in the matter of building up strong in the early spring, regardless of weather conditions. While I have met quite a few extensive apiarists, who did not like the Carniolans in some respects, yet all were a unit in agreeing that for building up in the spring they

were without an equal. But according to Mr. Doolittle's experience, these bees have not a single redeeming trait, and are "no good" in the strictest sense of the phrase.

Having for quite a few years past, handled with pleasure and profit, a goodly number of Carniolans and their crosses, and knowing Mr. Doolittle's opinions of them, I naturally concluded that our Borodino friend had something out of the ordinary in Italians, for, be it understood, I have had at the same time, Italians from some of America's best queen-breeders, in the same yards with the Carniolans. However, this opinion of mine received a rude jolt, when reading, on page 751, what Mr. Doolittle has to say relative to how his bees acted during the very trying spring of 1907. He says:

"The bees came out of the cellar in fine condition, as good as I ever knew them to do, but after a few warm days it turned cold, and it kept that way till near the middle of June, so that on June 10—at a time when the hives should have been full of bees and brood—there was not a single colony that was as good as it was the day it came from the cellar, while many colonies were not half as good." (Italics mine).

We are somewhat further north than Borodino, and I believe all Ontario bee-keepers will bear testimony that our spring weather was literally as described by Mr. Doolittle; in fact, it was impossible to get a day fit to open hives, before the month of June. The result was that when a few fine days came in apple-bloom, which was abnormally late, when we started to clip the queens, we found about one-third of the colonies with queen-cells started, and fully three-fourths of the colonies literally jammed

with brood and bees; and this in hives equal in capacity, to from 12 to 16 Langstroth frames. Instead of doubling up weak colonies, it was a case of heading off swarming by forming nuclei, and a number of these same nuclei were in grand condition for the honey-flow.

Now all the attention these bees had received throughout all the cold spring weather was simply being left warmly packed, with the knowledge that they all had an abundance of stores to draw upon. Although there were only about half a dozen days that pollen came in, yet the great quantity of honey that each colony had, was literally turned into brood and young bees before fruit-bloom came on.

But nearly all these colonies had a dash of Carniolan blood in their make-up. Nor was my own experience any exception, for in visiting a great number of apiaries on inspection work, whenever I found any Carniolans the fact would be attested to by colonies over-running with bees. No, I do not sell queens, but if such were the case, I would insist on giving a dozen to Mr. Doolittle to show him what he has missed in the past.

By giving such expert attention, as Mr. Doolittle is so exceedingly well qualified to do, he was able to get from each colony run for comb honey an average of 61 pounds—this after doubling up and otherwise manipulating a lot of bees that by his own account were in a miserable condition to take advantage of a honey-flow. One can not help but wonder, what might have been the yield, if his bees had been at least part Carniolans, and at the beginning of fruit-bloom, boiling over, and with "coats off," ready for anything that might come along.



Age of Queens and Superseding

BY C. P. DADANT.

There has been considerable discussion, from time to time, regarding the length of life of queens, and the advisability of superseding them artificially before they become too old. Some recommend annual requeening, others at the end of 2 years, others at 3, and others still affirm that the bees attend to this matter properly.

The purpose of this article is to examine the different methods and opinions of noted writers, which will help in drawing conclusions.

To get a very safe statement from writers on bee-culture, it is best to go to the text-books. Articles written for the bee-papers give many new things

but there is less guarded thought in contributions to the press than in books, for the reason that the writers of books are aware of the permanency of such works, and read and re-read their statements before allowing them to go out of their hands. Contributors to the papers, on the other hand, are apt to launch assertions that may prove incorrect. We see it daily. A very good instance of it is to be found in one of our bee-papers for January. A writer having stated that beeswax to be digested must "melt in the stomach," the editor, who is one of our brightest men, corrected him by saying that beeswax melts at about 130 degrees, which is much higher than the temperature of the stomach. The fact is, that it is a poor grade of paraffin which melts at about 130 degrees, and that pure beeswax does not melt below 144, and is

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still less liable to "melt in the stomach." The reader will readily comprehend that it is safer to go to the books than to thus hurriedly-written contributions for our information, especially on the subject of "queens," which has been the most important in the natural history of the honey-bee.

Looking through different leading works on bees of modern times, in different countries, we find the following opinions on the age and superseding of queens:

GERMAN.—Dzierzon says: "The queen lives on an average 4 years. I once had a queen 5 years old which was still remarkably vigorous."

ENGLISH.—Cowan: "The queen may lay for 4 or 5 years, but her fertility decreases in proportion to the number of eggs she lays. . . . Her fertility decreases after the second year."

Cheshire: "The queen may attain the ripe old age of 4 or 5 years."

ITALIAN.—Doctor Dubini: "The case is not rare of bees substituting spontaneously a young queen for an old or imperfect queen, rearing the new one from eggs laid by the old one. Neither do they kill her. Either she dies before the young one is reared, or continues to live side by side with the other."

FRENCH.—DeLayens and Bonnier: "Queens may live up to 4 and 5 years. A queen will live longer in a small hive where her laying capacity is limited. . . . When her fecundity decreases the bees usually replace her by rearing queen-cells. The old queen is thus superseded by a younger one."

AMERICAN.—Langstroth: "The queen usually dies in her fourth year, though she has been known to live longer. . . . Queens sometimes die of disease or old age when there is no brood to supply their loss. Few, however, perish under such circumstances, for either the bees build royal cells, aware of their approaching end, or they die so suddenly as to leave young brood behind."

Quinby and L. C. Root: "Do not keep a queen longer than 3 years. Ever have an eye to the queen, and if she becomes deficient in any way, let her place be supplied by a new one."

A. J. Cook: "It is not uncommon for her to attain the age of 3 years in the full possession of her powers; while queens have been known to do good work for 5 years. The workers usually supersede her."

Doolittle speaks of the superseding of queens as "one of Nature's plans," and, speaking of a queen reared by the bees to replace her mother, says: "Had I not opened this hive for a month at this time, I would never have known that a change had taken place, as regards the queen."

C. C. Miller in "A Year Among the Bees": "Some queens do excellent work in their third year, and in rare cases in their fourth. If quite old they will be pretty surely superseded by the bees about the close of the harvest. . . . Many more queens are superseded after a good harvest."

The same writer, in "Forty Years Among the Bees," published 17 years later, says: "I have had good queens 3 and 4 years old, but as a rule I sus-

pect better results might be had not to keep them so long."

Root, in the "A B C of Bee-Culture": "Some queens die, seemingly of old age, the second season, but generally they live through the second or third, and we had them lay very well even during the fourth year. They are seldom profitable after the third year, and the Italians will sometimes have a young queen, 'helping her mother' in her egg-laying duties before she becomes unprofitable."

Summing up all these opinions, we find that queens are, as a rule, good for at least 2 years; that the greater or shorter duration of their fertility depends in part on the capacity of the hive and the number of eggs which they may be induced to lay by encouraging circumstances; and, lastly, that in most cases they are superseded by the bees before their fertility is ended.

From this we will deduce readily, and without much fear of controversy, that the idea of replacing queens every year is preposterous; that they should be allowed at least 2 full seasons, before being replaced. But what about replacing them later?

But here is another question: Queens are like hens and other animals or other insects, they are more or less prolific, and some prove much better than others. It is very probable that there are differences in the contents of the ovaries or of the spermatheca, as well as in their ability to mature eggs and lay them promptly. Every queen-breeder has noticed how quickly some young queens will fill every available space with eggs, keeping their workers on a constant strain to supply the brood with the necessary food, while other queens, reared at the same time, in the same manner, and even sometimes from the same mother, will drag along slowly and never fill as many cells with brood as their retinue would easily nourish. There is a very plain difference in fertility. It is obvious that a queen whose fertility is below average will keep the colony under average for strength, and the probabilities are that there will be but little surplus honey harvested in the colony of which she is the mother. Such a queen should be superseded just as soon as we find out her inferiority. But we must be sure that she is *below average*, for what would be the use of superseding her, if we could not give the bees a better one?

According to several of the writers named above—namely, Cowan, DeLayens and Miller—that queen lives longer which lays less. Miller does not say it in so many words, but he says that there are more queens superseded after good seasons. As queens lay more eggs in good seasons than in bad ones, it is safe to assume that, in his opinion, the superseding of queens after a good season is due to their having been exhausted by increased egg-laying. From this we would conclude that the long-lived queens are the poorest layers. I acknowledge that it would be impossible for me to assert this from personal experience, for I have never had the patience to keep an unprolific queen to see how long she would live. But I did, in a number of instances, pre-

serve queens of very extraordinary prolificness, just as long as they would last, and I can remember at least two cases where the prolificness lasted fully four years, and when I began to think of replacing the queen by a young one, I found, as Doolittle reports, that the bees had been doing it themselves. The men who, like C. C. Miller, clip the wings of their queens, have a very good chance to ascertain when the queen has been changed, and if a closer inspection of the hive was kept, in general, than the average bee-keeper follows, many more cases of natural superseding would be reported.

I do not believe that there is any doubt about the much greater fertility of some queens than the average. It is very probable that these queens have a greater number of egg-germs in their ovaries, and that these germs are also more enlarged and matured by the agencies of warmth and food than in the case of inferior queens. This brings us to the most important point. Is it not better to keep your most prolific queens as long as they show no signs of failing, and to breed your young queens from such long-lived, prolific queens, rather than requeen, every one, two, or three years, indiscriminately? When you have a queen under average, is it not best to replace her at once and take your chances on the young queen which will very probably prove at least up to average?

If we could, in every instance, or even in a majority of instances, replace our old queens by new ones of whose prolificness we were absolutely sure, there would need be no hesitancy about superseding queens as often as we thought best. But a queen, to be tested for prolificness, must be located in a full colony. If we buy queens, the breeder who furnishes them cannot vouch for their prolificness unless he has so tested them, and they are then valuable to him, and if he understands his business, he will charge you a good price for such queens.

To sum up, I will say that my method has always been to replace inferior queens as soon as I make sure of their inferiority, but in the case of good, average or very prolific queens, I aim to retain them as long as their fertility does not decrease, meanwhile trusting the bees with the task of superseding such queens by some of their own stock if they should notice the decrease of their powers before I do. After all, Doolittle is undoubtedly right when he says that natural superseding is "one of Nature's plans."

Hamilton, Ill.

Strong Colonies Desirable as Well as Profitable

BY J. E. HAND.

We often hear of colonies of bees becoming too strong in the spring prior to the honey harvest, and it is claimed by some of our best bee-keepers that such colonies do not, as a rule, do as satisfactory work at storing surplus as a medium colony, some even going

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so far as to say that strong colonies are not needed for best results, but, rather, medium colonies that are in the right condition. They do not tell us what constitutes this highly desirable right condition, nor why it is that an extra-strong colony should not be in such a condition as well as a medium one.

It is to be hoped that some of the wise ones will further enlighten us upon this subject or else cease to harp about colonies becoming too strong. One would think this habit was contagious, by the way it is being handed around among the papers of late.

Now, while I can see that a medium colony in a perfectly normal condition might far outstrip an extra-strong one that was thrown out of that condition at the beginning of the honey-flow, yet I think no one will attempt to prove that an extra-strong colony in a perfectly normal condition will not store more surplus honey than a medium one in like condition. I will go farther, and say that the former will often store more than twice as much as the latter, and especially in comb honey production. And why not, since it is *bees* that gather honey?

It is a wonder that some writers don't put this theory into practice, by breaking their colonies up into nuclei in order to have more colonies to gather more honey! This theory was exploded more than 30 years ago, and is a dead issue.

Judging by what has been written upon this subject, one would think it a difficult matter to keep an extra-strong colony in a perfectly normal condition for any considerable length of time prior to the honey harvest. And no doubt this is the reason why so many fail with such colonies. While it requires but little skill to manage a medium colony prior to the honey-flow, it often needs an expert to handle an extra-strong colony and keep it in just as good condition for storing surplus honey as the other. However, with that kind of a man at the helm, such a colony will distance the average one by a full length.

The strange thing about this matter is that no one has ever attempted to explain plain why it is that extra-strong colonies come out behind the smaller ones in the race for honey. Are we to understand by this that there is really no cause for such a seemingly unnatural result, and attribute it to luck?

I have always found such results to be the exception and not the rule; and when such a thing happens, there is always a good cause for it; and that cause is usually a played-out queen. The trouble could undoubtedly have been avoided by requeening the previous season.

The question arises, how are we going to keep these extra-strong colonies from swarming before the honey-flow comes, and thus spoil everything? Since such a thing would be fatal to comb honey production we must give the queen unlimited room, and put on a set of extracting combs to keep the honey out of the brood-chamber; and when the harvest comes with a rush, this mighty army of workers will roll up an amount of surplus far beyond our expectation,

and we will cease to fear a strong colony of bees.

My bee-keeping friend, your success in comb-honey production will begin right where you leave off fooling with weak colonies of bees.

In conclusion, keep more bees in each hive, and keep them in a normal condition by requeening each year, and success is sure.

Birmingham, Ohio.

Beginning in Bee-Keeping

BY G. M. DOOLITTLE.

A correspondent writes that he thinks of entering into bee-keeping as he has a high "bee-fever" on, through reading the American Bee Journal which a friend let him have during 1907. He says he does not know exactly whether he is informed enough through his reading to make a success of the undertaking, and asks me to give an article on "beginning in bee-keeping," as he is now a regular subscriber, and believes that such an article will help others as well as himself.

Remembering the articles from the pens of Elisha Gallup and others for beginners, away back in the seventies and eighties, in the American Bee Journal, which did me so much good when I was a beginner, I will try to give a few thoughts on this matter, hoping they may be of some benefit to others as well as to my correspondent, as he suggests.

A bee-paper is a good thing to take, for any and all who keep bees or are interested in them in any way, but with the paper should go a book on bee-keeping, which should be thoroughly studied so that the first principles of apiculture will be familiar—so familiar that the one reading will know whether what he or she reads in the bee-papers is practical or not; for an enthusiast on bees often writes things for publication before he has tested the matter he proclaims sufficiently to know that it is practical. If the beginner is not informed on these first principles in bee-keeping, he is quite apt to "bank" on anything which reads so "catchy" as most bee-theories do, and thus he is led off on a "wild goose chase," which generally results in our beginner becoming disgusted, and proclaiming that bee-keeping does not pay; also resulting in the losing of all he has invested in the undertaking.

For this reason I always advise the careful and studious reading of one, at least, of the many good text-books we have on bees; before any bees are purchased, or any great sum of money is put into the business. In fact, I would say, don't pay out more than \$40 or \$50 to get a start, including bees, hives, books, papers, and everything. If you do not buy more than 3 or 4 colonies, \$50 should cover all the expenses necessary for a start for anybody that has little else to start with save a "bee-fever," and if that is the situation, 4 colonies is certainly *all* the bees that should be bought, while 2 colonies would be sufficient, that being the number I started with in the spring of 1869, and from which grew my apiary of 300 colonies of the middle eighties.

Then, contrary to what I heard once advocated at a National Bee-Keepers' Convention, I would advise the beginner to make his own hives, etc., all except the sections, and these I would buy in the flat. Of course, you will want a sample hive to work from, unless the hives in which you buy your bees are to your liking. If so, all you have to do is to make others like them. And why do I advise the making of your hives at first? That you may really know what a hive costs, and become convinced that the smooth and "catchy" appearance of any hive or fixture does not "count" toward practical apiculture.

My first hives were made of rough hemlock lumber, just as it came from the sawmill, and, strange to say, many of these hives were in good, practical shape, long after some of those "fancy" hives which I was led to buy through the "smooth tongues" of supply dealers, had passed out of existence.

Then, this making of your own supplies at the start will "rivet" you with a practical love for your business, that will count toward *success* in all the years to come.

Do not become "crazy" over the puffs of wares by those having said wares for sale, and pay out your hard-earned dollars (earned in some other business), more than just to get a start. Make your bees and yourself self-sustaining, and after the first start do not pay out anything more than what the bees bring you in, always remembering that if you cannot make 4 colonies pay, you cannot 400 or 4000. By starting with a few, these few will increase as fast as your knowledge will, and by the time you have the 4000 you will be able to handle the same properly to a complete success, while had you started with 400 or 4000 *failure* would have almost surely been the word written at the end of your undertaking.

Then, should it so happen that you found yourself unfitted for bee-keeping with a small start, you would have the consolation of knowing that you had lost but from \$40 to \$50, instead of \$400 to \$500, or perhaps as many thousands, as some do.

Also remember, if you wish to succeed, you must look after your bees. If any person expects to realize a large income from his bees, and scarcely ever look after their condition—simply hive them and put on the sections—he will find himself greatly mistaken. Not that the whole time must be spent in overhauling the frames, or "fussing" with the bees but enough time *must* be spent to know that they are in a good, thrifty condition at all times.

Then you want a knowledge of your location. Spend quite a little of your time the first 2 or 3 years out in the fields and woods, following your bees to the flowers, or finding your bees on the flowers, and knowing what they are doing there, whether gathering pollen or honey, or perhaps propolis, till you are familiar with all the plants and trees which give your bees anything of value, and especially those from which a surplus of nectar is obtained; also the average time of their coming into bloom. Having found out these things, then make all the minor bloom con-

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tribute toward bringing the bees up to their maximum strength as to numbers and a desire to store a surplus, just at the time that your location brings the surplus-nectar bearing flowers into bloom in their greatest profusion. By so doing you will bring your "field" and your bees together, so that they will roll in a *great, big success* for you; while, if you fail just here, no great success can be obtained, no matter how profuse the nectar-secretion at the time of the minimum number of bees in your colonies, or how maximum the strength of your colonies, if that strength comes when the nectar-producing flowers are gone, or before they come.

There are lots of other things which tend toward the success or failure of a beginner, but the above are sufficient for the "better digestion at one sitting," as well as before the underlying foundation on which to build a "permanent and successful structure," along the line of apiculture.

Borodino, N. Y.

Aphididae or Plant Lice

BY PROF. A. J. COOK.

There are several reasons why beekeepers should be interested to learn about the aphids. Their natural history is unique and surprising; indeed; their destructiveness is often alarming, as in cases of the "green fly" on grain last year in Kansas. Often, too, this injury is to our honey-plants, as one of the largest of the aphids in the United States works on the basswood.

Again, the aphids secrete honey-dew, which is of the same nature as honey, as it is composed of reducing sugar, and is excellent, and, as it need not to be digested, is probably superior as a source of honey. I have known the bees to gather much of the honey-dew from the Lachness that works on evergreens in the East, and the honey was of very superior quality. I doubt if there is any better honey than that which comes from this honey-dew from some of these aphids.

NATURAL HISTORY OF APHIDS.

The life history of plant-lice is as interesting as it is exceptional. In the fall, a little earlier than this (Dec. 19), as the cold comes on, there appear the only males that are ever to be found. Now, too, come the normal females. These mate and lay their eggs, which are not many in number, and so the insects pass the winter as eggs. In the spring, as the foliage opens, the eggs hatch and only agamic females come from them. That is, these females produce without males, and their progeny are, like our drone-bees, the result of parthenogenesis. There may be a dozen or more generations of these agamic females during the summer. These do not lay eggs, as do most insects, but the young are born alive—that is, the eggs hatch within the parent louse.

There is one more peculiarity of these lice, and that is, they are dimorphic; that is, they appear in two forms in the season of work. The most of them are wingless, but occasionally they appear with wings and are able to fly from

their old host-plants to a new pasture-field. This is of great service to the insects, as they are a serious menace to the host-plants that give them home and food, and soon the plants would die, and they be starved, except that they are able to fly to other host-plants. This point should be remembered as it suggests a way to destroy these plant-lice.

There is one thing that is pleasing regarding these devastating pests, and that is, they have many enemies. This is why we often find that though they may be very common in the early season, as they increase with enormous rapidity, and later often in a few days they seem to melt away as though struck by the very bosom of destruction. This is doubtless due to the fact that they have numerous foes among birds and other insects. The fact that they abound in such numbers so that they crowd the plants that harbor and feed them, makes them a very bountiful source of food to any animal that takes to such diet. Here in California, roses and ivy may be literally covered with aphids in April, and in two or three weeks they are nearly all gone so that it is difficult to find one of them. The cause of this rapid taking off is that a braconid fly—a minute parasite—attacks them, and it increases even faster than the lice; and so they melt away as by fire. This suggests a possible way to rid a place of these pests. It is often easy to introduce the parasites, from some other locality where they abound, and as these "work for nothing and board themselves," it is a cheap way to fight the aphids.

The plant-lice are so abundant, and crowd in such profusion to every part of the plant, on the under side of the leaves as well as above, that it is very difficult to destroy them by artificial means. The coal-oil emulsions will kill the lice and not destroy plants, and yet it is impossible to apply them in many cases of attack, such as that of the grain aphid and the melon plant-lice. Tobacco smoke is deadly to them, but this must be confined as in greenhouses, and so is rarely practicable to use.

The fact that these aphids often have two or three host-plants which they attack exclusively, gives a further remedy that may often be used to good purpose. The potato plant-louse sometimes destroys to the tune of millions in our country. The potatoes are often harvested early, and so the aphids must hie to other plants or die. It is found that they use chickweed and peas as host-plants after the potato harvest. If, then, we see to it that these plants are not in the region of the potato-fields, we will starve out the pestiferous plant-lice. In our rich, low valleys near the Salton Sea, excellent melons and cantelopes are grown very easily, and as they come very early they are grown at a surprising profit. There is one handicap on this industry—the melon plant-lice are often a serious scourge to the melon-growers. Here the harvest is over early in the season, when the vines could all be plowed under, in preparation for a later crop. In this case it would be a wise policy to discover the later host-plants of these

aphids, in the hope to practice clean culture, and so banish the pests.

THE SLUG A BORER.

I suppose all our readers are acquainted with the slugs. They are really shellless snails. Indeed, they once had shells, but have lost them in their development history. It is also well known that the snails and slugs are fond of damp, and will not sojourn where the earth is dry and arid. Again, the slugs and snails feed on vegetable matter wholly. Of late I have word that slugs are boring into oranges. In this case the fruit must lie near the earth. In some cases the slugs have crawled up as far as 12 or 18 inches, and have bored into fruit that distance from the ground. I was appealed to help by advice and suggestion in this case. I called attention to the fact of the slug's love of moisture, and suggested that the trees were headed so low that a condition very favorable to the slugs were secured. Pruning away the low branches and letting in the sun and air, would drive the slugs away and save the fruit. And do we wish to grow our fruit on the ground, any way?

We cannot know too well the life history and habits of all our animal associates, for with such knowledge we will often know how to steer clear of harm, that also might work us serious injury.

Claremont, Calif.

Season of 1907—Feeding Sugar Syrup—A New Location

BY F. L. DAY.

The past season was a poor one for honey in Northern Minnesota. The spring was fully a month later than some of those of recent years. This did not make any great difference with my own bees, for they were in excellent condition. Forty-one colonies were taken from the cellar, 39 being in apparent good condition. One of the others was put over a strong colony. The weak one had a queen which had begun to lay some. I used 2 excluders and a wire screen, also, for the first 3 days. But the queen of the weak colony disappeared, and the workers joined those of the strong colony, without any fighting. The other colony which died was seemingly all right at first, but soon dwindled away in spite of anything I could do.

My 39 colonies were increased to 61 by the nucleus plan, which suits me the best of any for making increase. I had formerly taken the queen and 2 or 3-frame nuclei of brood and bees from strong colonies to place in a new hive. Then 9 or 10 days later I would divide the remaining frames of brood and bees so as to form 2 or 3 more nuclei and still leave 1 or 2 frames of brood in the old hive. The nuclei were then left to rear their own queens from the cells given them with the brood, and later to build up as best they could during the season. Good results were obtained. The nuclei nearly always built up strong, and some of them gave a little surplus.

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The old colonies thus divided gave more total surplus than an equal number of others not divided. But many of the nuclei became strong too late in the season to give any surplus that year. This year (1907) I made two improvements. One was to have plenty of laying queens for all nuclei, and the other was to give each nucleus 2 additional frames of hatching brood about 3 weeks after forming.

About March 1st I made arrangements with a prominent queen-breeder to ship me 22 untested Italian queens just when I should need them. They were sent in 3 lots, and all arrived in good shape. Two frames of brood and bees and 1 frame of honey and bees were taken to form each nucleus. The cage containing queen and attendants was put on top of the brood-frames, with the cardboard removed from the candy. The bees were then confined 3 or 4 days.

After 5 days all nuclei were examined. Most of the queens were then out on the combs and laying a little. A few were still in the cages. Twenty of the 22 queens were thus successfully introduced. One died 3 weeks later, but the other 19 proved to be very prolific. Most of them were soon filling their 10 brood frames in good shape. Some of these nuclei stored as high as 40 to 50 pounds of surplus honey before July 20. Our best flow usually comes after that time, being from basswood and the latter end of white clover. But the past season there was no surplus secured from any source after July 20. Basswood blossomed fairly well, and I never saw bees thicker on the trees. Still no surplus was obtained. This left me with only 40 pounds of clover honey per colony or less than half, of a fair crop. There was no fall flow, either. I had to feed 870 pounds of sugar, or 14 pounds per colony.

Last spring, Dr. Miller, in speaking of my feeding thin sugar syrup after Sept. 20, expressed doubt as to how much I really fed per colony. My feeders hold 8 or 9 quarts each. For a strong colony entirely destitute of stores I have often filled one of these feeders twice, making fully 16 quarts of half sugar and half water. This quantity has been stored in the combs and nearly all sealed over in 2 or 3 weeks later. In general, I have fed from 4 to 16 quarts per colony, nearly all after Sept. 20.

In the fall of 1906 I fed over 30 of my 43 colonies from 4 to 14 quarts, besides all colonies having a chance at what I feed outdoors daily to keep the bees good-natured. My bees as thus fed winter well. In 5 winters taken together, I have lost only 3 colonies in the cellar and about 6 after taking out in the spring. A real weakling is a rare novelty.

The principal reason why I feed so late is that from 6 to 9 of the 10 brood-frames in each hive are usually full of brood until about the middle of September. The past fall I fed every one of my 6 colonies from 6 to 13 quarts of thin syrup, between September 15 and October, and the only anxiety I have in the matter is that some did not receive enough to suit me. But I would not advise so late feeding where it can be avoided.

During the last week in October I moved my bees, shop, etc., from the place where I had kept them six seasons, to a new location one-half mile distant. The bees were shut in the hives 2 days before moving. They were moved on a cool, frosty morning. The 5-16 inch entrance the width of the hive gave ample ventilation to all colonies. Five colonies were let out the same day, but the rest were kept confined 3 days more. None of either lot returned to the old location.

The new location is a clearing in a dense forest, with just room for the hives, shop, bee-cellar, dwelling-house, etc. As Mr. Hasty once said in speaking of such a woodland location, "I see swarms on my glasses." I expect to see them on the trees, too. But I intend to make the clearing larger this winter, and by having all laying queens clipped as usual, I expect to be master of the situation.

We had mild weather all the past fall. Nov. 22, 23 and 24 the bees flew as in mid-summer. I put mine in the cellar Nov. 30.

Detroit, Minn.

Are a Queen's Drones Affected By Her Mating?

BY T. W. LIVINGSTON.

I have read Mr. E. V. Pagan's article, on page 717 (1907), and wish to say in reply that with my little "flourish," or whatever it may be called, I did not intend to convey the idea that I really meant to explode the theory in question in the minds of all, but merely to ignite the slow-match that would cause it to explode of its own absurdity in the minds of all reasoning people that would take the trouble to examine carefully the facts of the case. I am well aware that there is too much green material in the minds of some to permit the kind of explosion I have in mind.

Now, I think Mr. Pagan is too exacting in his demands for proof, for it would obviously require that a great number of black bees had been moved near my apiary the second year to have produced the results recorded in my article on page 687, for surely the vastly greater number of Italian drones in my yard would have increased the liability of my queens mating purely to a corresponding degree so that the presence of a large number of drones from mated queens in my yard, and they being impure, is the only thing that will account for the results that followed. I can assure him that no great change had taken place in my surroundings with regard to black bees in my vicinity; besides, I had other evidences that the mismating came from my own yard. Read again my article.

I am well aware of how the theory that a queen's drones are unaffected by her mating is supported, and I am not disputing the well-known facts, nor the testimony of the microscopists that find spermatozoa in the eggs laid in worker-cells, but not in those laid in drone-cells; but there are certain facts that I can perceive without any microscope, that have quite as great a bearing

on the case. I can see that pure Italian drones, however dark, are different in appearance from pure black drones. Also that the drones of a pure Italian queen that has mated with a black drone do show—some of them—the color and general appearance of the black drone. Likewise, a black or Caucasian queen mated with an Italian drone will produce some (and sometimes many) drones with Italian coloring. Now, how does that color get there, and what does it signify? If color shows the blood or race at all, how can drones be pure that show the color of another race from that of their mother?

I long ago observed that the mismated queens turned darker in color after a time than their purely-mated sisters, so that I am sure that if a lot of purely-mated queens are compared with a lot of mismated queens reared from the same mother, the difference in color will be plainly apparent.

I am not yet claiming that a queen's drones are as much affected by her mating as her workers, but that they are just as surely affected, and am still "cock-sure" of my ability to demonstrate it.

I thank Mr. Pagan for his reply to my article, and would like to hear from him again on the subject, or from any others that feel interested in getting at the truth of the matter. It would be a very convenient thing for us if that theory were true, and I have no object in combatting it except that to me it is manifestly untrue, and I believe it is best for us to know the facts, and govern ourselves accordingly. My experience indicates that queens do not so often mate with drones from a distance as is generally supposed, but the mismating comes most frequently from drones in our own apiary. I once had my apiary of about 150 colonies of Italians about 1½ miles from an apiary of about 60 colonies of blacks. I used comb foundation and controlled drone-rearing, while my neighbor did neither, so that his bees produced probably twice as many drones as mine, yet I did not have more than 5 percent of my queens to mismate. So I would say, keep none but drones from purely-mated queens in your own apiary, and your troubles with mismating will be very much less.

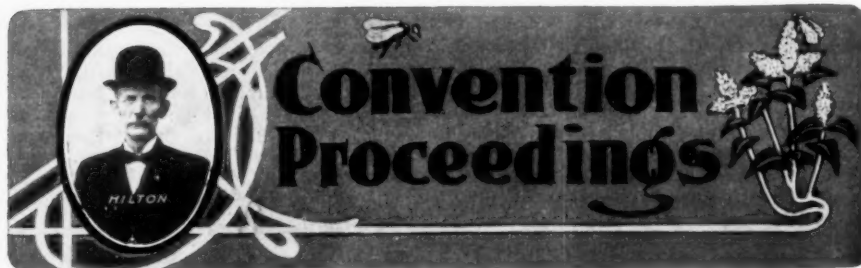
Leslie, Ga.

"Beneath the Old Shade Tree"

This is composed by E. A. Reynolds, and is a most beautiful song and chorus which should find its way into every home where there is a piano or organ. By special arrangements with the publishers, our readers will receive a copy of the above song, postpaid, by sending 6 cents in postage stamps to THE GLOBE Music Co., 17 West 28th Street, New York, N. Y.

Apiarian Pictures

We would be glad to have those who can do so, send us pictures of bee-yards, or of anything else that would be of interest along the line of bee-keeping.



Report of the Chicago-Northwestern Bee-Keepers' Convention.

The 17th annual convention of the Chicago-Northwestern Bee-Keepers' Association was held in the Briggs House, Chicago, Dec. 5 and 6, 1907, with Pres. George W. York in the chair.

Mr. Dadant, Mr. Kannenberg and Dr. Bohrer were appointed as an Auditing Committee.

Dr. Miller, Mr. Kimmey, and Miss Candler were appointed a Committee on Memorials.

COOKING SUGAR SYRUP FOR FEEDING BEES.

"Is syrup best cooked for bees?"

R. L. Taylor said not to cook it if fed early enough.

The question arose as to whether to use a double cooker. Some said "No," but others said, "Yes, if the one who does the cooking is careless, but usually it is not necessary."

Mr. Taylor advised feeding earlier, the food not heated, when the bees will digest it. Dr. Miller said if fed late, feed warm and thick, but it is much preferred to feed early, as the bees will work it over better.

E. J. Baxter said it was not necessary to have it boil at all.

Dr. G. Bohrer had fed bees 40 years ago, with warm feed. He claimed boiling was not necessary. He fills shallow combs in a super with syrup, and the bees carry it down, and seem to do well.

SUGAR CANDY FOR BEES.

Dr. Bohrer said scorching the feed rendered it poisonous to bees.

Dr. C. C. Miller said creamed candy will stay soft.

Mr. Taylor asserted that if soft the bees will use it all, and there will be no loss, while if hard and grainy there will be a waste.

Mr. Dadant advised pouring candy over coarse paper and then break it up before too hard.

Dr. Miller asked Mr. Dadant why they had made no candy for a long time. Mr. Dadant replied that the bees had not needed very much lately. Bees go to the water-trough a great deal when fed on candy. Candy is an emergency food.

Dr. Miller said that he had fed honey to the bees in winter, and prefers it to candy.

PROTECTING BEES FOR WINTER.

Mr. Wm. M. Whitney stated that he winters bees out-doors, with double-wall hives, and planer shavings between.

Secretary H. F. Moore said he uses cork-dust in an empty body set over the hive.

Mr. Baxter declared the Dadant hive a success always; with a mat over the top of the hive, and double packing of leaves all around.

Dr. Miller said that paper has been a success usually, but a Canadian claimed it was always a failure with him and all his acquaintances.

J. C. Wheeler said leaves had been a failure with him. He thinks the sun-light helps the bees.

Mr. Whitney told the convention that he would keep the packing on during May in his locality (Southern Wisconsin), with the double-walled hives. He said that bees in double-walled hives build up sooner in the spring than those in single-walled hives, because the former are warm all the time, but the single-walled hive gets too cool part of the time.

Mr. Taylor said that he had made a careful experiment with a number of swarms. He set the hives close together and surrounded them with boards and then packed with sawdust between. He left them until June, and found that the bees not protected had wintered the best. The main point is to have sound stores of honey.

Mr. Baxter claimed that it is not the stores. In 1884 and 1885 he had a very severe winter. He had 3 yards.

Mr. Taylor said he winters bees altogether in the cellar; that those in single-walled hives do better out-doors than in chaff hives. Sound stores are the most important thing.

Mr. Whitney asked whether fall honey is bad.

Mr. Taylor replied that fall honey is poor and thin, and mixed with pollen.

Dr. Miller said locality is very important.

Mr. Dadant also said that locality is very important. He said that he winters bees out-of-doors. The weather in his locality is warmer than Northern Illinois. Outdoor wintering has been better 4 out of 5 years.

Mr. Whitney said that Mr. Taylor should use planer-shavings instead of sawdust, out-doors.

CELLAR-WINTERING OF BEES.

Dr. Miller asserted that bees should be put into the cellar the day before the last day that is fit for them to fly in the fall.

Franklin Wilcox said he has put his bees into the cellar from the 10th to the 25th of November. He has carried them into the cellar with a falling temperature.

Mr. Taylor wants no breeding in the cellar. Rearing of brood runs down the strength of the bees. He said he put his bees into the cellar Nov. 21, on a cloudy day, and leaves the bottom-boards on the summer stands.

Dr. Miller declared a flight is very necessary before putting bees into the cellar.

Mr. Wilcox said a flight is very necessary immediately before putting them into the cellar.

Twenty reported that bees breed in February.

Mr. Dadant agreed with this.

Dr. Bohrer said that the cellar should be as dark as a dungeon all the time.

Dr. Miller said his cellar is light most of the time. He believes that air and light together, and ventilation are necessary. There is a furnace in his cellar.

Mr. Wheeler has had experience with bees in the cellar with no furnace, and also with a furnace. He claims bees winter well even where combs are moldy.

SUPERS FOR COMB HONEY.

Dr. Miller claims that T-supers are best for comb honey.

Mr. Taylor says wide frames are best.

It was decided that the secretary arrange to have supers of different sorts exhibited at the next annual meeting, at an expense not to exceed \$1.00 each.

On motion it was ordered that the Chicago-Northwestern Bee-Keepers' Association join the National Bee-Keepers' Association in a body, at 50 cents per member.

The following officers were elected for the ensuing year: President, George W. York, of Chicago; Vice-President, Miss Emma M. Wilson, of Marengo; and Secretary-Treasurer, Herman F. Moore, of Park Ridge, Ill.

BEST HONEY-SECTION TO USE.

Mr. Taylor said the 4-piece section is the best because made of poplar. It is open clear across the top and bottom. He would use one-piece sections if they were open clear across.

Dr. Miller used to use 4-piece sections, but now uses one-piece sections, and prefers them.

In the discussion that followed it was claimed by some that you don't break so many 4-piece sections; that you can make the 4-piece more easily, and that you can use any kind of wood in the 4-piece sections.

Mr. Whitney says one-piece sections spring out of "true" badly, for the groove is too tight when folded.

Mr. Taylor said there is a machine for putting up the 4-piece sections, and he will give any one the address of the maker.

Dr. Miller said he will hold onto the one-piece sections as long as he can get them. He claims that wetting the back of the grooves toughens them.

Mr. Gilbert agreed with Dr. Miller.

Dr. Miller told how he wets sections with a kettle of hot water, wetting 500 at a time, in the crate that they are packed in.

Theo. Fluegge said that he takes out the sections from the crate, stacks them upon holders, and pours water from a kettle on the back of the grooves.

WHY DO BEES BALL QUEENS?

Dr. Miller said the bees ball a queen to protect her.

Mr. Taylor said they ball a queen to keep her from getting away, as when a strange queen is introduced.

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Mr. Whitney said that on introducing a queen he found a queen balled.

Dr. Bohrer declared that balling a queen is one of the puzzles to him. He thinks it is an indication of a dislike for the queen.

Mr. Wheeler said that stray bees dislike the queen and ball her.

Mr. Dadant asserted that bees are upset by some unusual occurrences when they ball the queen.

Dr. Miller declared that bees never sting a queen to death unless the human interferes. Cold smoke blown on the ball of bees will release a queen at once.

M. M. Baldridge said that bees ball the queen because they think she is a strange queen, by her actions. To prevent balling the queen always smoke the bees, or rap on the hive to cause them to fill themselves with honey, when introducing her. A young and active queen in spring is apt to be balled, owing to her running about in the hive, frightened by the opening of the hive.

Mr. Dadant said that bees seldom make a practice of balling queens.

Mr. Taylor said that bees must not be fussed with too much, and then not much balling will result.

RENEWING QUEENS.

A majority do not renew queens at all.

Mr. Dadant advised replacing queens when they become inferior. He mentioned a queen 5 years old, and still vigorous.

Dr. Bohrer agreed with Mr. Dadant.

Mr. Whitney claimed that bees would not always supersede a queen at the best time.

Dr. Miller said it may be an advantage to supersede queens and breed from stock that is long-lived.

Mr. Dadant declared that workers wear themselves out, and the best bees live the shortest time.

Mr. Wheeler said we are not so dependent upon the long life of the queen.

Dr. Bohrer then spoke on whether more than one queen in the colony is useful. He said that one queen lays all the eggs a colony can warm and hatch.

W. B. Chapman said that 2 queens cause no swarming, according to Mr. Alexander.

Mr. Whitney related that he tried to use 2 queens in the hive. He got no surplus in the double hive, and one queen was killed during the winter.

Mr. Taylor thought it was hardly to be believed that Mr. Alexander runs 2 queens in one hive successfully.

Mr. Whitney mentioned a case where 5 colonies were in one box—one in each corner and one in the center—and they worked all summer harmoniously.

Mr. Dadant has found 2 queens in one hive occasionally, even on the same comb.

Mr. Wheeler said he had seen the same thing.

Dr. Miller stated that it is the rule that when the queen is superseded, the mother and daughter are together in the hive. He mentioned cases where bees had got tired of trying to supersede the queen.

Mr. Kimmey gave instances of the same thing.

(Continued next month)



By W. A. PRYAL, Alden Station, Oakland, Calif.

An Open Winter.

The winter so far has been an open one; while the atmosphere has, at times, appeared a trifle colder, the fact is that it has been mild. Tender vegetation in this portion of the State has not been damaged by the frosts. I have seen tomato plants in this county to-day that are yet green and nice—something almost unusual at the end of January. We may have a touch of a cold snap in February, but it is doubtful if we have any real cold weather this winter. I have noticed for years that if we do not have what we might call a "killing frost" by the end of the last week in January, it is pretty certain the winter will be a mild one.

The rainfall for this portion of the State has been a little below normal. The past fortnight has been rather a rainy one, and the prospects at this writing are that another storm is brewing, so it is safe to predict that our rainfall for the season will be up to, if not above, the average. Owing to the past two years being fairly good ones from an agricultural point of view, it is not necessary that this year's rains be excessive. In the southern portion of the State, as far as I am able to learn, the rainfall has been short. Already prayers for rain have been offered in the churches there. I believe seasonable rains will come, and with warm weather during the nectar-secreting time, the bees will wing in the sweets, so that later the bee-man and his gasoline-driven honey-extractor will take care of the crop.

A Yellow Cytisus.

In the January number I mentioned that there is only the white variety of *Cytisus proliferus*, and that Prof. Bailey notices no other. Having called Prof. Wickson's attention to the fact that the University of California labels its specimens of this shrub *Cytisus proliferus albus*, that gentleman writes me to this effect:

"We have always written *Albus* in connection with *Cytisus proliferus*, because there is a yellow variety which we received under the name *flavus*. The *Albus* is the *Tagasaste*, or tree alfalfa. It is quite possible that the botanists have given the two colors different specific names."

Mercy Like Chunk Honey—It's Good.

Poor old Billy Shakespeare has caused our dear old friend, Dr. C. C. Miller, to believe that "the quality of mercy" lays in the comb. (He did not say "lay" for the reason, I suppose, that the queen lays

in the comb (but he used "is" instead.)

No, Doctor, I think "the quality of mercy" may have been strained, but it is now "candied"—just the nicest and sweetest way it could be. The Bard of Avon was not up on modern bee-keeping, Doctor, or he would have taken the trouble to say that mercy might be run through a strainer or even an extractor and come out better than before. In such shape it might be soon found in great, big "chunks" of candied honey. Just think! Yum, yum!

The California Bee.

So different is the climate of California from that of any other place in the world, that animal and plant life here seems to be different, too. By careful breeding it is relatively an easy matter to produce offspring that is better than the parent. The State is becoming noted for its new creations—for its new and worthy varieties of plants and flowers. Of recent years a sort of combination of interests have sought to give all the credit for work in plant-breeding to one man, namely: Luther Burbank. The gentleman named has become a specialist in this line, and successful results must necessarily follow, though he is not the pioneer nor the only investigator in that direction in the State. There were new varieties of fruits, flowers and vegetables originated in California before Mr. Burbank came to the State, and he is not the only one to have produced hybrids that have attracted attention. But it is not of these producers of new kinds and varieties of plant-life that I intended to write of.

Much has been done in the way of breeding finer grades of domestic animals. The fame of our fine horses have encircled the globe. Those who have systematically bred cattle, swine and poultry have been meeting with satisfactory results. But what have we been doing in the bee line? Echo answers from the valleys, canyons and mountain sides—nothing. And yet the field for improvement is a large one. Climate, coupled with scientific work, will surely bring forth a bee that may be better than any now known race. I believe the old line of bees that were brought to this State a half-century ago, has been so acclimated and so mixed with the blood of Italians, that what we now call "blacks" is an entirely different bee from the so-called blacks of the East. Our "blacks" are not of a color that warrants them being so called; rather, they are a brown bee; and as large, generally, as the best Italians. I have had some colonies of them that were superior to any Italians I ever had. Probably if I bred

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up a strain of those bees, I should have obtained a bee that would have been a record-breaker. This is a line of work the Government might well take up at its experimental station at Chico, in the northern portion of the State. I believe I wrote briefly on this matter some years ago. I am sure it would pay any one who has the time and inclination to make a study of bee-breeding.

Some years ago a Mr. D. H. Johnson, of San Diego County (this State) came out strongly in print in favor of the common bee as a honey-gatherer. He held that the black bees and their crosses, gathered fully as much honey as the most thoroughbred races; that the honey was fully as fine in quality, and that "no

bee on earth builds such delicate combs and caps the honey with more virgin whiteness than the poor, despised black bee." Others have so held, too.

While the Italians have some good points, the blacks, when as carefully cultured as the others, will be as good honey-gatherers; they will commence to breed earlier in the season, and there is no doubt about their being more immaculate cappers of honey. I believe the proclivity they have of rushing to the lowest extremity of a comb when they are undergoing examination by the apiarist, can be bred out of them.

Who will give us *Apis Californica*, to put it somewhat unscientifically?

Plurality of Queens in the Hive.

Speaking of this in the British Bee Journal, G. W. Avery says:

"Since the system was announced in the American papers, I have been trying to solve the difficulties connected with it, and must frankly admit with not very encouraging results. It is quite possible, I have found, to introduce several queens to a colony in more ways than one, and quite easy to keep them there so long as food is supplied with a liberal hand, or while a honey-flow is on. When the income is withdrawn all queens but one disappear, and the colony settles down to its normal condition."

Langstroth and the Removable Frame.

It is amusing, and a bit sad, that such an error should find its way into print as one appearing in the Australian Bee Bulletin, page 129. It is there stated that about 1872 Rev. Mr. Langstroth visited a foreign land and brought back the bar-frame hive! No doubt, when his attention is called to it, the editor will be glad to make the correction by saying that 20 years prior to the time mentioned Langstroth invented the movable frame hive. Very likely only a typographical error.

Depth of Honey Tanks.

I. Hopkins advises that tanks for storing extracted honey should not be more than 20 inches deep, and as big as you like superficially. The shallower the tank the more rapidly the small bubbles of air will rise to the surface, and to facilitate this and ripening, the surrounding atmosphere should be warm and dry.—Australian Bee Bulletin.

Item About the Bee-Moth.

"When the moth is disturbed it moves with a jump and a flit, making it hard to catch." Yes, hard to catch after it gets to jumping and flitting, but very easy before. Move the fingers slowly till within an inch or so of where the moth is sitting, then quickly make a dab, and you have it. Now something interesting to youngsters. When you catch a moth, pull off its head; and if it is a female—nine times out of ten it will be one—it will almost immediately begin feeling around with its ovipositor. Shut together your thumb and finger, and let the ovipositor feel its way into the crack between them, and a very little round white egg will be laid there—perhaps several.—Stray Straw in Gleanings.

"Tasted Like Honey."

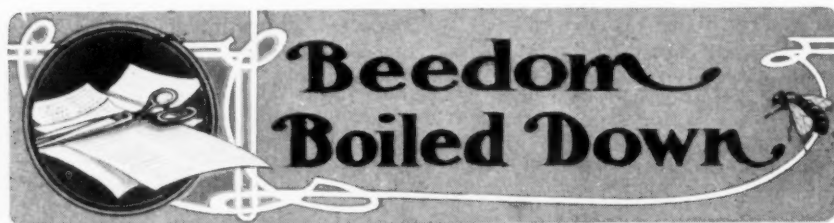
A Maryland brother sends the following, which may be characteristic of his "locality":

"What in the world have you got on your lips?" asked the young man, after the struggle was over.

"Nothing," said the young lady, indignantly; "what did you think?"

"Tasted like honey," replied the frank young man.

He didn't have to fight for the next one.—Nashville American.



A Kink in Heating Honey.

The following is from The Bee-Keepers' Review, page 338: "The heating of honey prevents granulation, and I believe that the higher the temperature to which the honey is brought, the more effective the treatment; and, it is very important to add, the greater the danger of injury to the honey. The length of time that the heat is continued also has a bearing upon the danger of injury. Keeping these ideas in view, Mr. Wm. A. Selser heats his honey to a higher temperature than is usually done (168 degrees), bottles the honey, and then immediately cools it by immersing the bottles in ice water. The honey is brought to this high temperature by the use of steam heat, and great care must be exercised that the honey be not injured. Two persons are kept constantly busy stirring the honey in the tank; otherwise that next the outside would be ruined before the honey in the center was hot enough. It might be thought that the immersing of bottles of hot honey in ice-water would crack the bottles; so it will, unless a certain ratio is preserved between the temperature of the bottles and the ice-water."

Speed of Bees and Rate of Gathering.

The question is not infrequently raised as to how fast they gather, and any facts tending toward the answer are always of interest. Rev. J. G. Digges, the able editor of the Irish Bee Journal, has made the following valuable contribution toward that end:

"The following experiment carried out at Lough Rynn in 1904, has a certain amount of interest:—Three bees that had delivered up their burdens were taken, one each from hives A, B, and C; they were marked white, red and green, respectively, and were placed in a match-box. The operation was twice repeated, the nine bees being confined in three match-boxes. Then the owner,

having set his watch with watches of two friends left at the hives, cycled a mile on a straight road, opened the first match-box and threw out the bees. This he did, at intervals of ten minutes, with the two remaining trios. The time was marked as carefully as possible. The average time for hives A, B, and C were, respectively, 4 minutes, 8 seconds; 5 minutes, 11 seconds; and 3 minutes and 2 seconds; from which it was calculated that the bees of hive C traveled 20 miles an hour, of hive A 15 miles, and of hive B 12 miles an hour. The results cannot be said to be absolutely accurate, but the unfortunate queen of hive C was kept breeding like fury in the following season, and her progeny gave the best results right through to closing down time in October.

"A subsequent series of experiments showed that the bees of colony C occupied an average of 7 minutes in collecting the nectar, and 5 minutes in disgorging it and fussing around the hive. Assuming the distance of the supplies to be 1 mile, the load one-fifth of a drop, the proportion of water 50 percent, and the rate of flight as stated above, and making a liberal allowance of 6½ hours per working day, the result of one bee's daily labor proved to be two drops of honey. The honey dealt with was from clover, and when extracted, ripened, and bottled, it weighed ¾ grain per drop. If, therefore, required 4,667 bees working 6½ hours on clover 1 mile distant, to produce 1 lb. of honey. The honey was sold in bulk at 5d. per lb., net return, and the produce of one bee's active labors for one day came out at less than 1,000th part of 1d. Such rough and ready experiments cannot be put forward as in any sense conclusive. If they teach any useful lesson it is that, for profitable bee-keeping we require (1) a vigorous race of bees, (2) multitudes of field-bees during the honey-flow, and (3) the strictest economy in every direction all through the year.

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Send Questions either to the office of the American Bee Journal, or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does not answer Questions by mail.

Transferring from Box-Hives—Putting on Supers—Sowing Sweet Clover Seed.

1. I have 5 box-hives with bees that I want to transfer into new frame hives. By taking the bees from each hive and putting half into one new hive and half into another with the old queen, and introducing a new queen to the half without a queen, can I make a success?
2. When should I put the first super on?
3. If I should sow sweet clover seed on an old hillside, would it blossom the first year?
NEW YORK.

ANSWERS.—1. You would be likely to succeed; but it is hardly the best way. Wait till the colony swarms; put the swarm on the old stand, and the old hive on a new stand. Twenty-one days later transfer the colony in the old hive into a new hive. At that time there will be no worker brood in the combs in danger of being injured.

2. Since you are in a white-clover region, give supers when you see the first clover-blossoms out. Bees will not store quite so soon as that, but it's better to be a little in advance. But keep close watch or you'll miss seeing first blossoms.

3. No; sweet clover is a biennial, comes from the seed and grows this year, blossoms next, and then dies, root and branch.

Early Requeening—Eating Comb Honey.

1. I have a colony of bees which did not do anything last year, and I want to requeen that colony next spring. How early can I get a queen? and where? would it be all right to send down South for her? Can I get her early enough so that the colony will be in good shape for the white clover honey-flow? I prefer an Italian queen.

2. Is the comb in comb honey injurious to a person's health? Most people when eating comb honey swallow the comb.
IOWA.

ANSWERS.—1. It is hardly best to think of introducing a queen before bees begin to do some gathering; during fruit-bloom at the earliest. Before it is time to order a queen you will see advertisements by reliable men in the columns of this journal. It will be all right to order from south or north. A successful introduction ought to leave you all right for the clover crop.

2. Beeswax is utterly indigestible. It is sometimes used to make corks for bottles containing acids so powerful that they burn up ordinary cork, and of course the weak acids of the stomach can have no effect upon it. I have seen something about its being melted in the stomach; but the heat in the stomach is many degrees too low to melt beeswax. Even if melted, it would still be as indigestible as ever. But lots of indigestible things are taken into the stomach that do no harm, and may do good. When comb honey is chewed with other food and taken into the stomach some claim that the finely divided portions of wax are a benefit. Certainly they are not likely to do any harm.

Crooked Combs—Miller Frames—Chestnut Lumber for Hives—Nail-Spacers.

1. Some of my combs are crooked, and I would like to renew them by taking out about 2 of the worst ones, and putting in 2 frames filled with full sheets of comb foundation. Where is the best place to put those 2 frames—on the outside next to the dummy, or somewhere else?

2. Why do you have bottom-bars so wide (1½ inches)?

3. How late in the fall could I open a sealed cover and be sure that the bees would seal it down again?

4. Could I use Miller frames for extracted honey?

5. Will bees build comb in a space of say ¾ of an inch between the bottom of bottom-bars and bottom-board, or between 2 brood-chambers, if the comb is not built down to the bottom-bar?

6. With Miller frames for extracted honey could I use the common straight-blade uncapping-knife, or would I have to have a special bent knife to go down between the top and bottom bars? I mean with 1½-inch spacing. Would the comb be thick enough with wider spacing, say 7 frames in an 8-frame hive, so I could shave off the cappings with a straight-blade knife down the sides of the top and bottom bars?

7. Why do you have the ends of top-bars just 5-16-inch thick? Why not have them ¾ or ¾-inch thick?

8. I have been making some Miller frames, but I find I can't get hold of the ends of the frames with my fingers to get them out of the hive, unless I move them apart, or have some tool. Why do you have the frame-ends so wide, (1½ inches), when you can't get hold of them? I am going to make some Miller frames, but I am going to narrow the ends of the top-bars down to ¾-inch wide, and ¾-inch thick.

9. How would chestnut lumber do for bee-hives?

10. I bought a colony of bees last fall, but they were on 12 empty loose-hanging frames put close together in a 10-frame hive, and of course the combs are crooked. To get the combs straight I am going to give them a hive of frames with full sheets of foundation. Where would you put the new hive—on top of the old hive, or on the hive-stand with the old hive on top? And when would you give it to them? I mean to let the colony have both until they have a brood-nest established in the new hive, and then take the old hive away.

11. Your nail-spacers catch on the end-bars, when down in the hive. How would it do to use nails with heads, with a diameter of 3-16-inch on the point, increasing to ¾ where it touches the frame? How would brass-headed tacks with heads ¼-inch deep do?

12. Will bees build combs down to the bottom-bar in frames that are not built down, if a starter is put on top of the bottom-bar?
NEW YORK.

ANSWERS.—1. You will do as well to put them in the middle. Better give them at a time when bees are busy, say at the beginning of the harvest or a little before.

2. Why have them narrower? Why have any bottom-bar at all? I suppose the chief reason for a bottom-bar is to prevent the bees building any further down, and a wide bar prevents it more perfectly than a narrow one. With a narrow bar bees sometimes build down. Do you know any good reason why there should be any wider space between bottom-bars than between top-bars?

3. That depends upon season and weather. It must be early enough so that propolis will still be warm enough to work.

4. Sure.

5. If there is a space of ¾ inch between bottom-bars and floor, there will be no building if bottom-bars are 1½ wide. With narrower bars there may be some danger, and the narrower the bars the greater the danger. If there is a space of ¾ inch between two stories, I'll guarantee comb built between them, good and plenty, whether the comb is built down to the bottom-bars or not.

6. With 1½ spacing you could use a straight knife, but it would not work so nicely as with

narrower bars. I think 7 frames in an 8-frame hive would work all right.

7. My frames are made to fit dovetailed hives with metal rabbets as they are regularly put on the market. If the end of top-bar is 5-16 thick there is a space of ¼ inch between top-bars and whatever is placed over. If ¾ thick the space over top-bars would be filled with glue; if ¼ thick, with comb.

8. I don't find any trouble with full width, as I want to push the frames apart anyhow, and they are a little nicer to handle without any shoulder. There's no law against your having ends of top-bars any thickness you choose, only if you make them ¾ thick, my advice as a friend is to make sure that there will still be left ¼ inch between the top-bars of the lower story and the bottom-bars of the second story, unless you want to learn to swear when the upper bottom-bars pull off because glued down.

9. From my recollection of it in boyhood, I should call it bad.

10. Put the new hive under the old one. That will give you the brood in good shape in the new hive; whereas, if you put the new hive over, it would be mostly filled with honey.

11. Your first-named spacer would be all right, only I think I'd just as soon have it only 3-16 at the base as the point for comb honey. Brass-headed tacks would be all right if they were 3-16 across the point of the head. You're on exactly the right track, and I've urged for years that something after your idea should be manufactured.

12. Yes, I've had them do so. But you must give such frames at a time when bees are building, or they'll tear down your bottom-starter.

Propolis on Tops of Sections.

I made some T-supers out of 4½-inch lumber, and the bees use too much propolis on top of the sections under the cover. With your T-supers, which I believe are made of 4½-inch lumber, do you have any trouble with the bees filling the spaces with comb? If they work all right for you, I think I shall make my next lot 4½.
PENNSYLVANIA.

ANSWER.—Most of my supers are now probably nearer 4½ than 4¾, the lumber having shrunk through age. There is seldom any trouble from comb being built in the space above the sections—perhaps never unless the bees are crowded too much. Neither was there such trouble when the supers were first made.

Preventing Gnawing of Separators.

How do you manage to keep the bees from gnawing the edges of plain sawed separators used in T-supers? Could I paint the edges with anything that would prevent it?
PENNSYLVANIA.

ANSWER.—I am not troubled with such gnawing, unless it be once in a while a separator that is extra thin, ½ inch being the regular thickness. But generally after a separator has been in use a year or two I throw it away rather than to clean it, which may be a little extravagant. Possibly the application of a hard varnish or of vaseline might prevent all gnawing.

Moving Bees About a Mile.

I have an apiary of 106 colonies that has to be moved about one mile by May 1. How can I do this without a loss of bees? The bees are in the cellar now, and in fine condition.
IOWA.

ANSWER.—If bees are moved as far as a mile, especially in the spring when they do not fly far for forage, there will be no trouble about their being lost by returning to the old location. You can move them any time after they have taken a cleansing flight, which they will do on the first day they are taken from cellar, if the weather is what it should be. Of course, the bees must be fastened in the hive, with enough wire-cloth to allow ventilation, although if the weather is cool, very little ventilation will answer, merely closing the entrance with wire-cloth.

Tar-Paper for Hive-Protection.

I run 2 apiaries. One I protected with tar-paper. I fed each colony about 30 pounds of sugar syrup, half and half. Both apiaries had the same chance to gather honey. The apiary not protected with tar-paper produced about one-half as much honey as the one protected. What made the difference in the yield of honey—the feed or the protection?
IOWA.

ANSWER.—I don't know. It may have been one or the other, or it may have been both

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together, and it may also be that there was a difference in the two lots.

You do not say when the feeding was done, but the likelihood is that it was fed for winter stores. If this fed lot had all the stores needed for wintering and a fair amount over, they would be likely to push ahead at brood-rearing in the spring, while the unfed lot, having very little more than enough to bring them through, would restrict brood-rearing, and so be not in good condition to improve the harvest; and in that way it would be easy to make the feeding account for the difference in results.

Foul-Broody Combs for Extracting Combs.

I have always been a comb-honey producer, but as we are now overstocked with bees right here, I want to run an out-yard for extracted honey. I can get extracting brood-combs that have never been bred in, that have been used on bees, some of which were affected with foul brood, and the combs have been set out and cleaned up by the bees. Now will these combs spread the disease, or are they safe to use again?

MICHIGAN.

ANSWER.—They might be all right, but I wouldn't want to bring into my yard anything that had been used in a foul-brood yard.

Feeding Bees in Winter.

When I put my bees into the cellar this winter some colonies didn't have very much honey. Now they are noisy. Some of them fly around. Is there any reason that they should be short of supplies? If so, would it be all right to put candy through the entrance into the hive? Or is there a better way?

MINNESOTA.

ANSWER.—There is probably some reason why they are short of stores, but having no particulars I do not know what the reason is. At any rate, if there is danger of their starving they should certainly be fed. Putting honey or candy in through the entrance is an excellent way, only you must make sure that the bees come down to get it. If they do not do so readily, warming up the cellar would help toward it. If they can not be induced to take it below, you may be obliged to give it above.

Bees Dying in Winter.

This is my third year with bees. I have one colony in which the bees are dying by the handful, almost daily, and about a hatful of dead bees are now outside the hive. They have nothing but honey—about 50 pounds—in their hive; no other feed. They have an Italian queen 2 years old. Why are they dying?

IOWA.

ANSWER.—Impossible to say. It is just possible that they are starving. That doesn't look at all likely, with 50 pounds of honey actually present, provided that the honey is at one side in a hive large enough, and the cluster is on empty combs on the other side. Against such a guess is the fact that the winter has been unusually mild. Possibly the trouble is due to the character of the honey. In some places the bees store honey-dew that is about the same as poison.

Short-Lived Bees—Queens Lost at Mating-Time.

1. When there are several colonies of bees in the fall in good condition, having plenty of bees and honey, and in the spring you find some of them very weak, does not this show that the queen is producing short-lived bees, and ought she not to be superseded?

2. I lost several queens last season when they returned from their wedding flight. The bees balled them. I have found them balled when they were not over a week old. When I took some bees and a virgin queen and made a nucleus, the first queen would be mated all right. It was the second queen that gets killed. Can you tell me why the bees killed the queens?

NORTH CAROLINA.

ANSWERS.—1. Not necessarily. It might be so in some cases; but in other cases other factors have so much bearing that it would not be safe to conclude that the bees were necessarily short-lived.

2. It is said that the bees attack the queens because they have acquired a strange scent. But there may be some question whether in returning from her wedding-flight she is likely to be killed by her own bees if the bee-keeper himself does not meddle. Bees sometimes ball their old laying queen, and when I have found them doing so I have always made it a rule to close the hive as quickly and quietly as

possible, leaving the bees entirely to their own devices, and on looking in the hive a few days later everything would be found all right. If you try to rescue the queen from the balling bees, you stand a pretty good chance of having her killed. Why may it not be the same way when bees ball a queen that has just mated?

Tin Number Tags for Hives.

I see in the American Bee Journal your system of numbering your bee-hives with tin numbering tags. I have been trying to find some of those numbering tags. Where can I get them?

KANSAS.

ANSWER.—I have made some effort to get supply dealers to furnish numbering tags, such as I use, but without success. The most I could ever obtain from them were tags of heavy manilla, paraffined. I'll tell you how to make the tin tags. Cut tin 4x $\frac{1}{2}$ inches (exact size not important), and make a small nail-hole about $\frac{1}{2}$ inch from one edge of one of the longer sides. That hole serves to fasten the tag on the hive. For this purpose use a light wire-nail, 1-inch or a little longer, driving it in only a little way, so it can easily be changed from one hive to another.

You can paint each tag separately, but it is better to make a sort of wholesale business of it. Lay the tags on a board, and fasten them there by driving through the hole of each a very small nail— $\frac{1}{2}$ or $\frac{3}{4}$ inch—driving the nail entirely in, so it will not be in the way of the paint-brush. Now give 2 or 3 coats of white paint, and on this paint black figures about 1 $\frac{1}{4}$ inches high, and as wide as will conveniently go on the tag.

Managing a Daisy Foundation Fastener.

I recently purchased a Daisy Foundation Fastener with directions to come with it. They say in part: "With a slight pressure on the section cause the iron plate to protrude under the starter; allow the latter to come in contact with it for an instant; then release and allow the starter to drop with its melted edge upon the section."

That's well enough as far as it goes, but what next? If I leave it there it burns up; if I take it off it falls out. Taking it altogether, I make very little progress. Probably you can help me.

CALIFORNIA.

ANSWER.—I suspect your failure begins when you let go the starter after putting it in place. That is, you take your fingers entirely away from the starter. Instead of that, let one or two fingers of each hand press lightly down upon the edge of the starter, enough to steady it in place—in other words, to keep it from falling out till the section is turned over. By that time, if you are expert enough to work quickly, it will have cooled enough so it will hang in place without falling out. At first you will be awkward and slow about it, leaving the section in the machine so long that the wood will have time to get hot; so when you take the section out of the machine, and before you turn it over you must hold it still long enough for both wood and wax to cool. Gradually you will gain in rapidity until the wood will have no time to get hot at all. Experience will teach you how high to keep the lamp turned up so as to have the plate neither too hot nor too cold. Some time must be allowed for the plate to heat before you begin using it.

Splinting Foundation.

1. Do you fasten splints by immersing them in melted wax and pressing them into place?

2. Do you wire frames?

3. Do you put splints on the same or opposite sides of the wire? Tell me anything else that will help one who has never used splints.

COLORADO.

ANSWERS.—1. The splints are first allowed to remain in hot wax till the wax soaks in. At first they will froth up, because the moisture in the splints fries out, and when they stop frothing you may count they are filled with wax. Then with a pair of nippers you pick up a splint and lay it in place on the foundation, where an assistant presses it in place with the wet edge of a little board. It is not so well to try to do it alone, for the splint should be pressed down immediately, while quite warm, so it will force its way into the foundation, and so the wax of the splint will unite thoroughly with the wax of the foundation. But it will not do to have the wax too hot, or else there will not be a sufficient coating of wax. If too cold, the splint will not be sufficiently embedded in the foundation. A lit-

tle experience will help you to get it just right.

2. No, the splints are all-sufficient.

3. The splints are put on only one side.

The principal object I had in view in devising the splints was to have the comb built down solid to the bottom-bars. To make sure of this my bottom-bars are in two parts, the foundation extending down between them. So you can also do with plain bottom-bars by having the foundation come down to touch the bottom-bar, and then running hot wax along the crack.

Bees show a strong inclination to have a passage between the bottom-bar and the bottom of the comb, and if a frame is given them when little is doing they are likely to gnaw open such passage. To avoid this, give them the comb to build only at a time when they are gathering and building.

Position of Frames.

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1. Is there any noticeable difference between drones hatched from a virgin queen and one that is mated, both being hatched from the same lot of queen-cells?

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AMATEUR QUEEN-BREEDER.

American Bee Journal

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2. There are probably many things that I would use with that kind of frame. One that happens to occur to me just now is putting a weak colony over a strong one in spring in order to strengthen the weak colony.

3. I tried to give in "Forty Years Among the Bees" exactly the way I do things, and rearing queens was given just as other things. I shall probably follow the same course the coming season, except as to using the two hives and exchanging queen, as given on page 242. It is less trouble on the whole, and more simple, to make a fresh colony queenless each time a fresh batch of cells is to be reared.

4. Must be a freak of locality. I should expect a colony to do good work the next year after being started as a nucleus, if strong enough.

5. I don't know. I couldn't be sworn that I ever run a single colony even one year without making any changes, even if it were only to change the location of a frame. To be sure, I may have left them undisturbed, but then I don't know.

6. Perhaps so; if the two queens are equal, because in the one case there is at least a little disturbance of the regular order of affairs in the hive, and in the other there is not. That, however, by no means militates against the fact that there may be real gain by doing a lot of introducing.

7. I should think that particular colony was working on something different from the rest. When that has occurred with me I have not been able to point out the trail, partly because it comes at a time when there is little leisure to find what bees are working on, and possibly also because I may not be a good trailer.

Golden Italian Bees.

I divided a colony of bees last summer and introduced a standard-bred Italian queen, which I had sent for. As soon as her bees commenced coming out of the cells, I was surprised to find that both the drones and worker-bees were golden Italians. I have read so many times that the golden Italians were not hardy and not desirable for practical purposes.

But this colony did so much better than any of the rest, and capped the combs better and cleaner, that I can not decide whether to breed from her or not.

What do you think of the goldens? Would it be practical to breed from this queen? I don't want to get a start in goldens if they are not as good as the leather-colored as a general thing.

IDAHO.

ANSWER.—Seeing that so far her stock has shown itself superior to your other stock, I would breed in part from her and keep close watch as to results, comparing her progeny with others. There seems to be quite a difference in the all-over goldens, some being reported extra good and some extra bad.

An Early-Reared Queen.

On page 26, Wm. Marshall says he had a queen born March 20 that was as prolific a queen as ever was in a hive, and says, "Now this does away with some of the theories that have been advanced." I think you claim that early-reared queens are poor. Which of you am I to believe?

SUBSCRIBER.

ANSWER.—Believe both. At least what each of us states as fact. Believe that he had a fine queen very early, and that queens reared early by me have been mostly worthless. I'm not entirely sure what he means about doing away with some of the theories that have been advanced, but I suppose he means the theory that early queens are poor. I hardly see how an exception does away with a rule. Even with Mr. Marshall, that good queen was the exception to the rule, for he says 2 other early queens "were no good." If I understand him I wish he would tell us what theory he means is done away with.

Simple Requeening Without Buying Queens.

Walter M. Adams, page 28, asks for a simple plan for requeening without buying queens. He has 11 colonies, and 3 of them have pure queens. The thing desired, evidently, is to give the 8 colonies queens of the same stock as the other 3 colonies. There is nothing much simpler than to rear queens from the pure stock and introduce them; but from the way the wish is stated I suppose he wants something more simple yet. So I'll give a plan that is exceedingly simple, that may be used with either a box-hive or a frame-hive, perhaps without even opening a hive, although it has the drawback that possibly only a part will be changed. But by following up the plan there will never be any increase of the poorer stock, all the increase being from the preferred stock.

If the best three are not stronger than the others, so as to be ready to swarm first, then brood or bees from the poorer must be given to the pure stock, so they will be sure to swarm first. Suppose the 3 pure colonies are numbered 1, 2, and 3, and the others 4 to 11. When No. 1 swarms, give the swarm and set it on the old stand, and set No. 1 on the stand of the strongest of the poorer colonies, say No. 6, if that happens to be the strongest of the poorer ones, setting No. 6 on an entirely new stand. That will result in having all the field-bees of No. 6 go to No. 1, weakening No. 6, and strengthening No. 1. In a week or more No. 1 will be pretty certain to cast a swarm, which is to be put on the stand of

No. 1, and No. 1 is to be put on the stand of the strongest of the poorer colonies left, say No. 4, No. 4 being put on a new stand. In 2 or 3 days No. 1 will swarm again, when the same process is to be repeated. When Nos. 2 and 3 swarm, there must be the same management, and there ought to be no trouble in having at least 8 colonies with queens of the better stock. Indeed, it is entirely possible to go beyond that, for so long as a swarming colony with a lot of virgins is continually strengthened by being set in the place of a full colony, it would be nothing remarkable for it to send out 4, 5, or more swarms. Well, suppose you have already had 8 swarms, and all the colonies from 4 to 11 have been set on new stands. When the next swarm issues, put it in place of No. 6, or some other of the ones moved first, and if you continue in that way it would be nothing strange to have as many as 10 or 12 swarms altogether. Some of the last ones will be weak. Break up the colonies with the poor queens, strengthening the weak swarms with them, and there you are with nothing but new stock on hand.

A Hydrometer for Density of Liquids.

On page 5 of the American Bee Journal for 1908, in an article on "Testing Honey as to Ripeness," it is said "it would be a good thing" to "get a hydrometer." What is a hydrometer? and especially, how is it used? Of course, I understand a "hydrometer" must be an instrument to measure moisture. Still I repeat the questions, What is it? and how is it used?

MASSACHUSETTS.

ANSWER.—A hydrometer is an instrument for determining the density of liquids, consisting of a weighted glass bulb with a long stem on which there is a graduated scale. It is put into the liquid, where it stands upright, the denser the liquid the higher it stands, the figures on the scale thus showing the density. If an up-to-date dairyman is near you, he may have a hydrometer which he calls a lactometer.

Weak Colonies in Spring.

What do you think of Mr. Alexander's spring management of weak colonies? What would you advise me to do to save the weak colonies in the spring?

IOWA.

ANSWER.—Some of the things Mr. Alexander favors it would be wild for others to follow, such as keeping so many colonies in one apiary, his special conditions favoring that; but as to the matter of weak colonies in spring he has done the fraternity a real service. Care, however, must be taken. The first time I tried it the strong colony was at work inside of 10 minutes fighting the weak one, and didn't stop till it made a finish. The colonies must be gently handled so there will be no getting together till the upper colony has had time to get the scent of the lower, or else a wire-cloth must separate the two for 2 or 3 days.

Vinegar in the Bee-Cellar—Increase—Crop for Honey and Produce—Sugar Syrup in Section Honey.

1. I have a cellar that is suitable in every way for wintering bees, but I have 10 or 12 barrels of very strong vinegar stored in it, which throws off a very strong odor. In your opinion, would it affect the bees' wintering well?

2. If small particles of ice form on the hive-entrance of a colony of bees that are wintering on the summer stands, is it an indication that they are not in good condition for winter?

3. Can you give the name or names of any person or persons running an apiary and not engaged in any other business, and making a success of it?

4. I will have 4 colonies of bees providing I winter them all right. I wish to increase to the fullest capacity, and yet not reduce the parent colony so much as to interfere with their storing some honey. Will you lay down a rule that I may follow?

5. What becomes of bumble-bees when cold weather comes on? You can never find them in their nest after the first cold spell.

6. What crop do you think would be the most profitable to plant for honey and produce? I refer to New York State.

7. Why is it that this paper does not publish the names and addresses of questioners?

8. If a person should feed bees with sugar syrup, and they should store some of it in sections, and those were sold as pure honey, would this be violating the pure food law?

NEW YORK.

ANSWERS.—1. I don't know. To of the air in a cellar where even a single great fu-strong vinegar is, one would think

American Bee Journal

together, and it may also be that there was a difference in the two lots.

You do not say when the feeding was done, but the likelihood is that it was fed for winter stores. If this fed lot had all the stores needed for wintering and a fair amount over, they would be likely to push ahead at brood-rearing in the spring, while the unfed lot, having very little more than enough to bring them through, would restrict brood-rearing, and so be not in good condition to improve the harvest; and in that way it would be easy to make the feeding account for the difference in results.

Foul-Broody Combs for Extracting Combs.

I have always been a comb-honey producer, but as we are now overstocked with bees right here, I want to run an out-yard for extracted honey. I can get extracting brood-combs that have never been bred in, that have been used on bees, some of which were affected with foul brood, and the combs have been set out and cleaned up by the bees. Now will these combs spread the disease, or are they safe to use again?

ANSWER.—They might be all right, but I wouldn't want to bring into my yard anything that had been used in a foul-brood yard.

Feeding Bees in Winter.

When I put my bees into the cellar this winter some colonies didn't have very much honey. Now they are noisy. Some of them fly around. Is there any reason that they should be short of supplies? If so, would it be all right to put candy through the entrance into the hive? Or is there a better way?

ANSWER.—There is probably some reason why they are short of stores, but having no particulars I do not know what the reason is. At any rate, if there is danger of their starving they should certainly be fed. Putting honey or candy in through the entrance is an excellent way, only you must make sure that the bees come down to get it. If they do not do so readily, warming up the cellar would help toward it. If they can not be induced to take it below, you may be obliged to give it above.

Bees Dying in Winter.

This is my third year with bees. I have one colony in which the bees are dying by the handful, almost daily, and about a half-dozen of dead bees are now outside the hive. They have nothing but honey—about 50 pounds—in their hive; no other feed. They have an Italian queen 2 years old. Why are they dying?

ANSWER.—Impossible to say. It is just possible that they are starving. That doesn't look at all likely, with 50 pounds of honey actually present, provided that the honey is at one side in a hive large enough, and the cluster is on empty combs on the other side. Against such a guess is the fact that the winter has been unusually mild. Possibly the trouble is due to the character of the honey. In some places the bees store honey-dew that is about the same as poison.

Short-Lived Bees—Queens Lost at Mating-Time.

1. When there are several colonies of bees in the fall in good condition, having plenty of bees and honey, and in the spring you find some of them very weak, does not this show that the queen is producing short-lived bees, and ought she not to be superseded?

2. I lost several queens last season when they returned from their wedding flight. The bees balled them. I have found them balled when they were not over a week old. When I took some bees and a virgin queen and made a nucleus, the first queen would be mated all right. It was the second queen that gets killed. Can you tell me why the bees killed the queens?

ANSWERS.—1. Not necessarily. It might be so in some cases; but in other cases other factors have so much bearing that it would not be safe to conclude that the bees were necessarily short-lived.

2. It is said that the bees attack the queens because they have acquired a strange scent. But there may be some question whether in returning from her wedding-flight she is likely to be killed by her own bees if the bee-keeper himself does not meddle. Bees sometimes ball their old laying queen, and when I have found them doing so I have always made it a rule to close the hive as quickly and quietly as

possible, leaving the bees entirely to their own devices, and on looking in the hive a few days later everything would be found all right. If you try to rescue the queen from the balling bees, you stand a pretty good chance of having her killed. Why may it not be the same way when bees ball a queen that has just mated?

Tin Number Tags for Hives.

I see in the American Bee Journal your system of numbering your bee-hives with tin numbering tags. I have been trying to find some of those numbering tags. Where can I get them?

ANSWER.—I have made some effort to get supply dealers to furnish numbering tags, such as I use, but without success. The most I could ever obtain from them were tags of heavy manilla, paraffined. I'll tell you how to make the tin tags. Cut tin 4x $\frac{1}{2}$ inches (exact size not important), and make a small nail-hole about $\frac{1}{2}$ inch from one edge of one of the longer sides. That hole serves to fasten the tag on the hive. For this purpose use a light wire-nail, 1-inch or a little longer, driving it in only a little way, so it can easily be changed from one hive to another.

You can paint each tag separately, but it is better to make a sort of wholesale business of it. Lay the tags on a board, and fasten them there by driving through the hole of each a very small nail— $\frac{1}{2}$ or $\frac{3}{4}$ inch—driving the nail entirely in, so it will not be in the way of the paint-brush. Now give 2 or 3 coats of white paint, and on this paint black figures about $\frac{1}{4}$ inches high, and as wide as will conveniently go on the tag.

Managing a Daisy Foundation Fastener.

I recently purchased a Daisy Foundation Fastener with directions to come with it. They say in part: "With a slight pressure on the section cause the iron plate to protrude under the starter; allow the latter to come in contact with it for an instant; then release and allow the starter to drop with its melted edge upon the section."

That's well enough as far as it goes, but what next? If I leave it there it burns up; if I take it off it falls out. Taking it altogether, I make very little progress. Probably you can help me.

ANSWER.—I suspect your failure begins when you let go the starter after putting it in place. That is, you take your fingers entirely away from the starter. Instead of that, let one or two fingers of each hand press lightly down upon the edge of the starter, enough to steady it in place—in other words, to keep it from falling out till the section is turned over. By that time, if you are expert enough to work quickly, it will have cooled enough so it will hang in place without falling out. At first you will be awkward and slow about it, leaving the section in the machine so long that the wood will have time to get hot; so when you take the section out of the machine, and before you turn it over you must hold it still long enough for both wood and wax to cool. Gradually you will gain in rapidity until the wood will have no time to get hot at all. Experience will teach you how high to keep the lamp turned up so as to have the plate neither too hot nor too cold. Some time must be allowed for the plate to heat before you begin using it.

Splinting Foundation.

1. Do you fasten splints by immersing them in melted wax and pressing them into place?

2. Do you wire frames?

3. Do you put splints on the same or opposite sides of the wire? Tell me anything else that will help one who has never used splints.

ANSWERS.—1. The splints are first allowed to remain in hot wax till the wax soaks in. At first they will froth up, because the moisture in the splints fries out, and when they stop frothing you may count they are filled with wax. Then with a pair of nippers you pick up a splint and lay it in place on the foundation, where an assistant presses it in place with the wet edge of a little board. It is not so well to try to do it alone, for the splint should be pressed down immediately, while quite warm, so it will force its way into the foundation, and so the wax of the splint will unite thoroughly with the wax of the foundation. But it will not do to have the wax too hot, or else there will not be a sufficient coating of wax. If too cold, the splint will not be sufficiently embedded in the foundation. A lit-

tle experience will help you to get it just right.

2. No, the splints are all-sufficient.

3. The splints are put on only one side.

The principal object I had in view in devising the splints was to have the comb built down solid to the bottom-bars. To make sure of this my bottom-bars are in two parts, the foundation extending down between them. So you can also do with plain bottom-bars by having the foundation come down to touch the bottom-bar, and then running hot wax along the crack.

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ANSWERS.—To answer that question in full might take a good deal of time in hunting up, and more space than can be afforded to tell about it. I never dare omit reading anything contained in any bee-paper I receive, for fear I may miss something that is new and good. Generally I get something to pay me for thus reading; so you see it would be a long story to put it all down in black and white.

2. There are probably many things that I would use with that kind of frame. One that happens to occur to me just now is putting a weak colony over a strong one in spring in order to strengthen the weak colony.

3. I tried to give in "Forty Years Among the Bees" exactly the way I do things, and rearing queens was given just as other things. I shall probably follow the same course the coming season, except as to using the two hives and exchanging queen, as given on page 242. It is less trouble on the whole, and more simple, to make a fresh colony queenless each time a fresh batch of cells is to be reared.

4. Must be a freak of locality. I should expect a colony to do good work the next year after being started as a nucleus, if strong enough.

5. I don't know. I couldn't be sworn that I ever run a single colony even one year without making any changes, even if it were only to change the location of a frame. To be sure, I may have left them undisturbed, but then I don't know.

6. Perhaps so; if the two queens are equal, because in the one case there is at least a little disturbance of the regular order of affairs in the hive, and in the other there is not. That, however, by no means militates against the fact that there may be real gain by doing a lot of introducing.

7. I should think that particular colony was working on something different from the rest. When that has occurred with me I have not been able to point out the trail, partly because it comes at a time when there is little leisure to find what bees are working on, and possibly also because I may not be a good trailer.

Golden Italian Bees.

I divided a colony of bees last summer and introduced a standard-bred Italian queen, which I had sent for. As soon as her bees commenced coming out of the cells, I was surprised to find that both the drones and worker-bees were golden Italians. I have read so many times that the golden Italians were not hardy and not desirable for practical purposes.

But this colony did so much better than any of the rest, and capped the combs better and cleaner, that I can not decide whether to breed from her or not.

What do you think of the goldens? Would it be practical to breed from this queen? I don't want to get a start in goldens if they are not as good as the leather-colored as a general thing.

IDAHO.

ANSWER.—Seeing that so far her stock has shown itself superior to your other stock, I would breed in part from her and keep close watch as to results, comparing her progeny with others. There seems to be quite a difference in the all-over goldens, some being reported extra good and some extra bad.

An Early-Reared Queen.

On page 26, Wm. Marshall says he had a queen born March 20 that was as prolific a queen as ever was in a hive, and says, "Now this does away with some of the theories that have been advanced." I think you claim that early-reared queens are poor. Which of you am I to believe?

SUBSCRIBER.

ANSWER.—Believe both. At least what each of us states as fact. Believe that he had a fine queen very early, and that queens reared early by me have been mostly worthless. I'm not entirely sure what he means about doing away with some of the theories that have been advanced, but I suppose he means the theory that early queens are poor. I hardly see how an exception does away with a rule. Even with Mr. Marshall, that good queen was the exception to the rule, for he says 2 other early queens "were no good." If I understand him I wish he would tell us what theory he means is done away with.

Simple Requeening Without Buying Queens.

Walter M. Adams, page 28, asks for a simple plan for requeening without buying queens. He has 11 colonies, and 3 of them have pure queens. The thing desired, evidently, is to give the 8 colonies queens of the same stock as the other 3 colonies. There is nothing much simpler than to rear queens from the pure stock and introduce them; but from the way the wish is stated I suppose he wants something more simple yet. So I'll give a plan that is exceedingly simple, that may be used with either a box-hive or a frame-hive, perhaps without even opening a hive, although it has the drawback that possibly only a part will be changed. But by following up the plan there will never be any increase of the poorer stock, all the increase being from the preferred stock.

If the best three are not stronger than the others, so as to be ready to swarm first, then brood or bees from the poorer must be given to the pure stock, so they will be sure to swarm first. Suppose the 3 pure colonies are numbered 1, 2, and 3, and the others 4 to 11. When No. 1 swarms, give the swarm and set it on the old stand, and set No. 1 on the stand of the strongest of the poorer colonies, say No. 6, if that happens to be the strongest of the poorer ones, setting No. 6 on an entirely new stand. That will result in having all the field-bees of No. 6 go to No. 1, weakening No. 6, and strengthening No. 1. In a week or more No. 1 will be pretty certain to cast a swarm, which is to be put on the stand of

No. 1, and No. 1 is to be put on the stand of the strongest of the poorer colonies left, say No. 4, No. 4 being put on a new stand. In 2 or 3 days No. 1 will swarm again, when the same process is to be repeated. When Nos. 2 and 3 swarm, there must be the same management, and there ought to be no trouble in having at least 8 colonies with queens of the better stock. Indeed, it is entirely possible to go beyond that, for so long as a swarming colony with a lot of virgins is continually strengthened by being set in the place of a full colony, it would be nothing remarkable for it to send out 4, 5, or more swarms. Well, suppose you have already had 8 swarms, and all the colonies from 4 to 11 have been set on new stands. When the next swarm issues, put it in place of No. 6, or some other of the ones moved first, and if you continue in that way it would be nothing strange to have as many as 10 or 12 swarms altogether. Some of the last ones will be weak. Break up the colonies with the poor queens, strengthening the weak swarms with them, and there you are with nothing but new stock on hand.

A Hydrometer for Density of Liquids.

On page 5 of the American Bee Journal for 1908, in an article on "Testing Honey as to Ripeness," it is said "it would be a good thing" to "get a hydrometer." What is a hydrometer? and especially, how is it used? Of course, I understand a "hydrometer" must be an instrument to measure moisture. Still I repeat the questions, What is it? and how is it used?

MASSACHUSETTS.

ANSWER.—A hydrometer is an instrument for determining the density of liquids, consisting of a weighted glass bulb with a long stem on which there is a graduated scale. It is put into the liquid, where it stands upright, the denser the liquid the higher it stands, the figures on the scale thus showing the density. If an up-to-date dairyman is near you, he may have a hydrometer which he calls a lactometer.

Weak Colonies in Spring.

What do you think of Mr. Alexander's spring management of weak colonies? What would you advise me to do to save the weak colonies in the spring?

IOWA.

ANSWER.—Some of the things Mr. Alexander favors it would be wild for others to follow, such as keeping so many colonies in one apiary, his special conditions favoring that; but as to the matter of weak colonies in spring he has done the fraternity a real service. Care, however, must be taken. The first time I tried it the strong colony was at work inside of 10 minutes fighting the weak one, and didn't stop till it made a finish. The colonies must be gently handled so there will be no getting together till the upper colony has had time to get the scent of the lower, or else a wire-cloth must separate the two for 2 or 3 days.

Vinegar in the Bee-Cellar—Increase—Crop for Honey and Produce—Sugar Syrup in Section Honey.

1. I have a cellar that is suitable in every way for wintering bees, but I have 10 or 12 barrels of very strong vinegar stored in it, which throws off a very strong odor. In your opinion, would it affect the bees' wintering well?

2. If small particles of ice form on the hive-entrance of a colony of bees that are wintering on the summer stands, is that an indication that they are not in good condition for winter?

3. Can you give the name or names of any person or persons running an apiary and not engaged in any other business, and making a success of it?

4. I will have 4 colonies of bees providing I winter them all right. I wish to increase to the fullest capacity, and yet not reduce the parent colony so much as to interfere with their storing some honey. Will you lay down a rule that I may follow?

5. What becomes of bumble-bees when cold weather comes on? You can never find them in their nest after the first cold spell.

6. What crop do you think would be the most profitable to plant for honey and produce? I refer to New York State.

7. Why is it that this paper does not publish the names and addresses of questioners?

8. If a person should feed bees with sugar syrup, and they should store some of it in sections, and those were sold as pure honey, would this be violating the pure food law?

NEW YORK.

ANSWERS.—1. I don't know. To smell the air in a cellar where even a single barrel of strong vinegar is, one would think it bad for

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either man or bee to breathe, yet the breathing of strong fumes of vinegar has been commended as a good thing for bad lungs. As a guess in the case, I would venture the opinion that your bees would be better off without the 10 or 12 barrels of vinegar, but that they may still winter well with it. If you try it, by all means report the result, so the rest of us may have the benefit of your experience.

2. No, there is nothing alarming about it any more than there is in seeing a man's breath form in icicles on his beard when he is out in freezing weather.

3. How would I answer your purpose? Since June, 1878—that's more than 29 years—I've had nothing to do with anything but bees in the way of a vocation, have had more than I could eat and drink, have not been "out at the knees" much of the time, and have had the jolliest kind of a time; wouldn't you call that making a success of the business? Perhaps you may think that besides working with bees I've been exposing my ignorance by trying to answer questions in this department, and also writing other things for the bee-papers. Well, there are Messrs. Gill, McIntyre, Mercer, Rauchfuss, Doolittle, Mendleson, Alexander, Townsend—oh, I can't think of them all—a whole lot of them.

4. If I understand the problem correctly, it's to say how to increase one colony to just as many colonies as possible, and yet as much honey from the parent colony as if there had been no increase. Don't you worry about my referring you to any book; I don't know of any book that tells how to do it. Neither do I know. I don't think the man is yet born that knows how, and I don't believe he ever will be born. It takes honey and labor on the part of the bees to make increase, and that must inevitably cut in on the honey crop.

5. I don't know. Will some one please tell us?

6. Perhaps buckwheat.

7. I'm not sure that I know all the reasons. Perhaps a sufficient reason is that in general apiarian questioners do not want their names and addresses given. Indeed, so strong is this feeling that in spite of the fact that they are never given, it is a very common thing for questioners to say, "Please do not give my name."

8. Yes.

Starting in Bee-Keeping.

I have never kept bees, but I want to begin now. Can you advise a beginner? I fancy Italians from what I read, as they seem to be most popular. I thought of starting with one colony, and increase as I learn.

NEW JERSEY.

ANSWER.—You are quite safe in starting out with Italians. Not so certain that it is best to begin with only one colony. While it would be very unwise to begin with too many colonies, it is well to have at least 2, for there are things you will be doing in the way of changed brood from one to another, and other things when you come to have more than one, and you may as well be having some experience in that line from the start. I'm wondering just a little if you're going to have a paper about bees and no book. If so, that's putting the cart before the horse; you should have a book, sure.

Beginning with Bees—Bees Leaving Hive.

After my first year's experience with bees I'll let you know how I am progressing. A swarm of bees came to our place July 13, 1906. I put it into a box-hive which they filled to the brim with comb and honey that fall. Last spring I put it under an apple-tree where it cast the first swarm July 18, another July 27, and the last one August 17. I weighed them Nov. 3, and No. 1 weighed 76 pounds, No. 2, 67 pounds, and No. 3, 59 pounds, including the hives, one of which is a 10-frame and the other two 8-frame. They are dove-tailed hives, with Hoffman frames. Now I think this is not very bad for a start.

But, the old colony left September 18, with not a bit of brood nor honey left. I tore the combs apart and found 117 queen-cells. Does that account for their leaving the hive? Also, do you think my other colonies are in danger of running short of stores?

MINNESOTA.

ANSWER.—A force of queen-cells 117 strong, with no brood, might well be enough to frighten a colony into deserting or doing almost anything else. You say there was "not a bit of brood," which leaves it a little uncertain whether there was no brood in the queen-cells or no brood in the hive besides the brood in the queen-cells. In any case the

likelihood is that they were without a normal queen, and had been for some time, reduced in numbers and discouraged. There is something abnormal about that swarm August 17, which I don't understand. Judging by the weight, your bees ought not to be in danger of starving.

Feeding Burnt Sugar Syrup—Transferring Bees.

1. Would sugar syrup that has been burned be safe to feed in spring? "A B C of Bee-Culture" says it is sure death to any colony so fed.

2. In transferring in spring, why not drum out bees from box-hives, being sure to get the queen, place the bees in a new hive with combs or foundation, set the new hive on top of the old one, with tight bottom-board, and place on the old hive what is called a "Dudley" tube? In that way, as soon as the young bees from the old hive are old enough to gather honey they pass up and enter the new hive. In the old way the young bees remain with the old hive 21 days, and in case of a heavy flow much would be lost.

MICHIGAN.

ANSWER.—1. Look again and see if the "A B C of Bee Culture" is not talking about winter stores. In winter it is of first importance that the bees should have the very best food, but after they begin to fly daily in spring they may be fed anything they will take, except poison.

2. Might work all right, only there might be danger early that the brood would not be properly cared for.

Good Queen Reared by "Mere Handful" of Bees.

Last spring caused several of my colonies to supersede their queens, and, as I suppose, the weather being so bad, some were lost, but by giving them another frame containing eggs, etc., all of them except one colony proceeded to rear another lot of queen-cells. They destroyed 5 or 6 cells. Finally they had dwindled to a mere handful of bees, and had not an ounce of honey in the hive. This was during the honey-flow from white clover, and as I had had lots of fun with them, I decided to try them again by giving them another frame of brood, part honey, and to my surprise they built 3 fine queen-cells. This was at the close of the white honey-flow.

When the fall flow came they were weak compared to the other colonies, but filled an 8-frame hive-body with plenty to winter on.

Now why did these bees build good queen-cells and rear a good queen when all authorities agree that good cells are made only by strong colonies? Or, was this an exception to the rule?

At this date this colony is heavy in stores and has about as many bees as any I have. The "mere handful" I speak of means just what it spells, as there was not a pint of bees in the hive.

MISSOURI.

ANSWER.—It was an exception to the rule, and there were exceptional conditions. It is of such great importance to have the best queens possible that the best conditions possible for good cells should be allowed. With a weak colony there are chances of cool spells when the cells will not be the best nursed and nourished. In your case, it may have happened that during 3 or 4 days when the bees fed the royal larva the weather was hot so that only a few bees were needed to keep up the heat, and the flow of honey spurred these few to their best. Possibly some other things were exceptional for the large force of bees is not merely for heat. In any case, it does not prove that it is wise to take any chances by trying to rear good queens without giving them best conditions. The next 20 times you tried the same thing the result might be very different.

Italian-Caucasian Bees—Rearing Queens.

1. I have 2 colonies of bees, one pure Italian and one pure Caucasian. If they winter all right I intend to rear some queens next summer. I have read that a cross between the Italian and Caucasian is a very good bee. Has this been your experience? Would you use the Italians, or Caucasians, for mothers?

2. If I rear my young queens from the Italian mother, how can I tell by their workers whether they have been mated with black or Caucasian drones?

3. "Quinby's New Bee-Keeping" advocates rearing queens in a small nucleus, with no other brood in it than the few larvae from

which the queens are to be reared. Do you think a beginner could get good queens by this plan?

ILLINOIS.

ANSWERS.—1. I have had no experience with such a cross, and it is a little doubtful whether you can learn anything very definite about it from others. As to Caucasians themselves, testimony greatly varies, some saying they are very good workers and some saying they are very poor; so it would be hard to be certain about a cross. If your Caucasians prove good, the cross might be good; otherwise not.

I don't know which it would be better to use for mother; it would be easy to try both.

2. I don't believe you can tell how they are mated, for I don't believe there is a place in Cook County where your queens will not be likely to meet drones from other yards. And I very much doubt if you could tell by looks of her progeny whether a queen from an Italian mother had mated with a pure Italian drone or a hybrid. It is doubtful if you can find a pure black drone within 10 miles of you.

3. I should expect very worthless queens from such a source, and it seems to me you must in some way have misunderstood Quinby. It may do to use a small nucleus after a queen-cell is well advanced, but not to start a queen-cell.

Standard Hive Dimensions.

1. Give the dimensions of the latest standard hive, the number of frames, and size of each, and tell how to fix the inside of the hive. Also give the size of the super.

2. Do the bees fill the super or main body of the hive first?

OREGON.

ANSWERS.—1. The size of frame most commonly in use is $17\frac{1}{2} \times 9\frac{1}{8}$, outside measure, the number of frames in a hive being usually 8 or 10, although a hive may be made of such a size that it will contain any other number of frames. You will see that the size of the hive depends upon the number of frames to be used. The hive must be large enough to allow a space of $\frac{1}{4}$ -inch over the frames, and $\frac{1}{4}$ or a little more at the ends, the bottom-bars coming down with the bottom of the hive. A space of $\frac{3}{4}$ to $\frac{1}{2}$ below bottom-bars is provided by the bottom-board or floor. I'm not sure just what you mean when you ask "how to fix the inside of the hive," but perhaps you mean as to spacing the frames. They are generally spaced $1\frac{1}{8}$ inches from center to center, some bee-keepers spacing a little wider. Some arrangement for self-spacing is in quite common use. Supers are of different sizes and kinds, care being taken to have them of such size as to fit the hive.

If you are thinking of making your hives, it would be well for you to have at least one hive, accurately made, to serve as a pattern. If you can get any sort of fair wages at other work, it will be cheaper to buy your hives.

2. The body should be first filled.

Experimenting With Bees—T-Supers—Swarming.

1. I used to take 2 bee-papers, and was always getting some fool idea in my head, and then experimenting with the bees; almost always they "went wrong." Last year I was away from home all summer, so I stopped the papers, arranged to have the new swarms hived, and "let 'em went." We had a very poor season, and but little surplus was secured by any one, but I got about as much as the other bee-keepers around here. What shall I do? Stop the papers or the experiments? or both? I am afraid I'll be like the majority of the human race, and not follow your advice unless it suits me, for when I had put the bees up for the winter, I couldn't stand it any longer, and renewed my subscription to the "Old Reliable," sent for back numbers of 1907, and have been having a "feast of fat things," catching up.

I use T-tins and have a little different plan from any I have seen. My supers are 18 inches long, inside measurement. I fasten the $\frac{7}{8}$ -inch block at the end with 6-penny nails, driving them in from the outside, letting the heads project $\frac{1}{4}$ -inch or more, so that they can be drawn out with a hammer. The flat tin is nailed to the block, of course. After the sections are in place I slip 2 thin wedges between the block and super. A piece of broken section can usually be crowded in. Then in taking out the honey turn the super over, drive out the thin wedges, draw the nails, loosen the block, and slip it out, and if you use springs at the side the super can be removed without any trouble.

2. Will a young queen swarm out after she

commences to lay? That is, if I take strong colonies and successfully introduce queens reared next spring, will such colonies swarm during the season of 1908 if they have plenty of room? I can't remember having had one do so where I knew the queen to be a young one. Some writers claim a queen never lays drone-eggs the first season, and I never found queen-cells started in a normal colony without more or less drone-brood in evidence.

3. If they won't swarm, do you imagine I have accidentally got near enough to the trail of a man Davenport to hear his foot-steps? I believe his wonderful secret is somewhere along this line.

If you "don't know" I wish you would keep your eye on any colonies you have with those conditions. I will try ½ dozen colonies next season unless you tell me it is no use. I can't afford any more as I will have to buy queens. We can't rear them early enough here.

NEW YORK.

ANSWERS.—1. It must be both or neither. If you want to stop experimenting, you must stop the papers, for they will be all the while suggesting, directly or indirectly, new things to try. If you want to go on with the experimenting you must keep on with the papers, unless you're a fool, because in order to experiment intelligently you'll need all the light you can get from the papers; and, besides, being the philanthropic chap you are, you'll want to take the papers so as to report in them the things you've made a fool of yourself by trying, so that I, and others as well, can avoid making fools of ourselves by trying the same things.

The question then remains whether you shall keep on with both or stop both. I don't know. But you're in good position to know. You stopped both for a time, and you can tell whether life was more worth living then than since you've started the papers again, for I know you can't keep from experimenting if you try.

Your plan with the T-super is the best plan in the world—for you. It's your baby. Whether it would be the best for me depends upon whether it takes less time or not to empty the super than without that block. In many cases I am sure it would take more; where the bees have done a big lot of gluing it ought to take less.

2. The answer to your question must be a little mixed. If you allow a young queen to be reared in a hive, you may count on no swarming before the next season. If you introduce a young queen, it depends. If the colony is in no humor for swarming at the time the queen is introduced, then no swarming. If in the swarming humor already, they'll swarm in spite of the tender youth of the queen. I once had a queen swarm in less than a week after being introduced, and she had been laying only about a week. If I had kept the colony queenless until swarming had been given up, and then introduced the young queen, it would have been all right.

3. The idea of thus getting in young queens is all right and excellent, but hardly Davenport's plan, for you have to find queens before getting in young ones, and Davenport says he never finds a queen. I know a plan almost if not entirely certain to prevent swarming, that takes only about 10 minutes for each colony, and you need never see a queen; in other words, if I understand correctly, it fulfills the conditions of the Davenport plan. Do you think it would be wise for me to give away the secret?



Good Prospects in Texas.

Bees are gathering some pollen today. Carniolans have considerable brood, and some drones are flying from strong Italian colonies. Prospects are good. GRANT ANDERSON.

Sabinal, Tex., Jan. 31.

Wintering—Bees Did Fairly Well.

I have been more or less interested in bees both in this State and Iowa for the past 20 years. I have tried wintering in the cellar and also on the summer stands, with both good and bad results. Last fall I left them until about Dec. 15 on the summer stands and then had to move them about 4 miles. I am wintering them out-doors protected on the north by a

board fence packed between and on top with flax straw. They have consumed so far an enormous amount of honey, owing, I suppose, to the weather. They have had 4 good flights since I moved them, the last being yesterday, Jan. 14.

Last season being my first year with bees in this State, and bees being new in this locality, I think they did fairly well, giving about 30 pounds surplus, as I worked them mostly for increase. J. E. BOWDER.

Huron, S. D., Jan. 15.

Watering Bees.

To water an apiary of 200 to 300 colonies of bees, I take an inch board 12 feet long, cut shallow grooves in it, crossing diagonally; nail a piece of 1 x 2 inches on each edge, bore a couple of holes at one end, run a wire through the holes and hang one end to a hydrant, and the other end raise so as not to have too much fall. Then I cover the whole surface of the trough with gravel ¼ inch deep. You can then turn on a small stream adjusted so that little or no water will go to waste, and you have a place where all your bees can drink and not get drowned nor chilled. No need to bother about the old watering-place, the bees will find the place fixed for them, at least they do here. G. F. MERRIAM.

San Marcos, Calif., Dec. 6.

[While this plan is not entirely new, it will be new to some.—EDITOR.]

Season a Failure in Nevada.

In the fall of 1906 I had 122 colonies, but the loss during the month of June, 1907, reduced the apiary to 56 colonies, and with the few swarms 59 colonies went into winter quarters in splendid condition. Then I bought an apiary and but 63 colonies of them went into winter quarters. I fear they are a little scant on stores. The condition of the whole is fair.

Mr. Doolittle says it is much more pleasant to tell of successes than of our failures, and I very heartily agree with him. However, we had a failure last year in Nevada (which is my home), and I hope we have learned

Will Work for Honey Next Year.

I started in bee-culture in 1905, having some good instructions. I had one colony in an old-fashioned hive, and seeing some of the movable-frame hives, I made a few and transferred 3 colonies in one hive, and lost them all. I bought more and kept on till in the fall of 1906 I bought one colony of leather-colored Italians, and worked for swarms. I got 5 good swarms and have them all now in good shape. I have in all 17 colonies in 8-frame hives. I am going after honey this year. I secured from my first swarm last year, 72 pounds of section honey. I don't want so many swarms next season.

I would like to know what is the very best bee for honey. Is there any kind that will beat the leather-colored Italian at building up or storing honey? W. J. H. FREE.

Cedartown, Ga., Jan. 18.

Bees Doing Well.

I wintered 21 colonies in 1906-07 and lost none. February was very warm. Fruit bloomed a month too early. The wind blew so that bees could not work. They had only 2 days of fruit-bloom, then the freeze. Alfalfa was cut by frost so the first crop was late and poor. I had a good many frames of honey which I gave to the bees, and then fed in supers in perforated feeders until June 10, when the honey-flow commenced, and it was a great flow. I harvested 65 cases of honey, besides saving a good deal to feed back next spring if I have to feed again. I had only 4 swarms. The bees are doing nicely this winter. There has not been a day so far that they have not been out at noon. We winter them on the summer stands in this country. E. C. WRIGHT.

Montrose, Colo., Jan. 22.

Bee-Keeping in Kansas.

I send some photographs, the one being a partial view of my apiary of 100 colonies in winter. It was taken Dec. 19, 1907. There was a warm snow of about 5 inches, and ever since then we have had open, warm weather.



WINTER VIEW OF THE APIARY OF J. J. MEASER.

something that will be helpful should we ever have such another season. One thing I learned—I shall always try to have a supply of sealed combs of honey.

I have been among a number of bee-men in the State, and have not met one good report. The spring opened up beautifully, with every appearance of a bumper crop until the month of June, when it turned to bad, stormy weather, with snow and freezing temperature, cutting off all resources and confining the bees strong with brood and young bees, and no stores; though many colonies seemed to go under from no other cause than bad weather. The past season was indeed poor, but beekeepers are a cheerful lot, and I hope we will all have bright, cheerful reports the coming season. J. E. PATTON.

Lafayette, Calif., Jan. 21.

The bees are apparently in fine condition. The past season was a very poor one for honey.

There was too much late freezing and cold weather, although the after part of the season was very good and a fine flow of excellent honey was produced, mostly from sweet clover and alfalfa, which sold at a fair price—16½ cents for comb and 10 cents a pound for extracted.

The other photograph is a partial view of the honey exhibit at the Kansas State Fair, held at Hutchinson, Kans., Sept. 16 to 21, 1907. It was one of the finest and largest exhibits ever shown in Kansas, being admired by every one who saw it, and a great deal of interest was taken in the matter of bee-culture. This is only the beginning of the bee-industry in Kansas. It has a great fu-

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ture for us. We hope to have a much finer exhibit at the next State Fair.

J. J. MEASER.

Hutchinson, Kans., Jan. 13.

Pattern After Successful Bee-Keepers—Bulk Comb Honey.

First, I wish to give credit to the American Bee Journal for the most of my success the past year, if you would call it a success. And I think 70 pounds average per colony a very nice success. It is very essential for a novice like me to pattern after those who have been

companions ever since, as I think I could not well get along with one without the other, and being a lover of honey, I would not be without a few bees at almost any price, although the honey-business is a little like the money business at present—a little in the dark. But thanks to the American Bee Journal for enabling me to operate for honey so as to be much above the average the past year in this locality; while my average was 25 pounds of comb honey, many others and some who have kept bees over 30 years, had less than 5 pounds per colony.

My bees had a flight December 13 and 27th,

is possible to add out-apiaries, being governed by the amount of reliable help for handling the crop, as the amount of nectar to be gathered when conditions are favorable is almost unlimited; while during a poor season, my 10 yards average as much per colony as my neighbors' who have but one yard. It is true our honey-flow is prolonged for many months, and does not usually come with a rush.

Mr. Doolittle's argument might fit overstocked portions of the East, but does not apply to bee-keeping in the Southwest.

B. A. HADSELL.

Buckeye, Ariz., Jan. 20.



J. J. MEASER'S APIARIAN EXHIBIT AT THE KANSAS STATE FAIR.

successful, such as Hilton, Doolittle, Root, Alexander, and many others. I run my yard for comb honey. But I use an extractor to a great advantage. I fill the honey cans about half full of nice, white capped comb honey, then pour extracted honey over this till the comb rises to the top of the can. This I sell for first-class comb honey. All combs that are a little dark go to the extractor. Hence my honey is all first grade. My fall honey, or red honey, is set away and put back in the hives in the spring. Every 10 pounds of red honey put in the hive in the spring is 10 pounds of white honey assured.

Elkin, N. C., Jan. 20.

G. F. JONES.

Poorest Season in Years—Mild Winter.

Last season was very poor. I had 65 colonies, and got only about 80 pounds of honey from the whole apiary. I had to feed about 700 pounds of sugar last fall for winter. My bees did as well as any around this section. I did not get any swarms last summer; it was the poorest season in many years. We are having a very mild winter so far, not much snow. The bees had a flight Jan. 21. I hardly know how they will winter. I expect there will be a big loss in bees this winter, but I live in hopes that we will have a good season in 1908.

GEO. H. ADKINS.

Ticonderoga, N. Y., Jan. 24.

Honey Crop Total Failure.

The honey crop in this locality for 1907 was a total failure. I fed back to the bees what little honey I got, with 13 pounds of sugar syrup per colony extra. Quite a number of bees in this part of Ontario starved to death right in midsummer, but that was mostly among farmer bee-keepers. But we are looking for a crop next summer. We can not tell anything as to the prospect at present.

Westbrook, Ont., Jan. 13.

A. M. BRIDGE.

Mr. Alberts Bees and Bee-Paper Companions.

The pictures which I send were taken the second year after starting with bees. The first swarm of this apiary was hived by the roadside near my home, in a box. Afterwards I got a movable frame hive and sent a dollar for the American Bee Journal the same day, and the two—bees and Journal—have been close

and the 29th I put them into the house-cellar, where they usually winter well.

The accompanying picture is that of one family at least: who is interested in apiculture. They are all there except my good wife, who made the exposure without breaking anything, and who also takes an active part in the apiary in my absence. The apiary is pretty much in the shade of the old apple-trees, facing the southeast. The north end of it may be seen back of "Charlie" and "Dewey," who seem to think they hear a swarm.

CHAS. ALBERTS.

Sun Prairie, Wis., Jan. 24.

[See the first page for the pictures.—EDITOR.]

Many Bees for Much Honey.

I have been in the bee-business 9 years. I began with one weak colony in a box-hive, which was the nucleus of the apiary I now have. I think I have advanced by leaps and bounds. I have learned that in order to get much surplus, the colonies must be strong in bees. Therefore, I have kept down increase as much as possible. My object has been honey, not increase. I produce comb honey only. So far we have a home market for all we produce. The season is short and our main crop is buckwheat honey.

Indiana, Pa., Dec. 30.

J. E. KLINE.

Bees Did Well.

My bees did well after cold weather was over, in 1907. In April I lost 2 colonies out of 6, and increased to 12 colonies. I secured 222 pounds of comb honey. A colony whose queen I bought in July produced 48 pounds of comb honey.

J. C. CUNNINGHAM.

Streator, Ill., Jan. 29.

More Bees or Better Yields—Which?

The above subject, by G. M. Doolittle, attracted my attention as I started in bee-keeping by taking bees on shares, and have advanced step by step, knowing no limit, adopting Hutchinson's idea before he advocated it so strongly. I have figured that if it pays to keep 200 colonies in one yard, that I could with the same extracting outfit, by hiring more help, keep 2000 colonies of bees in 10 yards, and I have proved it by actual experience.

In our large alfalfa fields in the Southwest, surrounded by mesquite and desert flowers, it

Loss of Queens in Mating and Superseding—Improvement of Bees—Catalpas for Apiary Shade.

We had quite a heavy loss of young queens the past season. It came about by the young queens not being able to locate their own hives. Our apiary is located in a peach-orchard. The trees were nearly all killed by the frost in October, 1906, and were cut down last spring, which left an open lawn with hives in pairs, all painted white, 75 in number, which rows about 9 feet one way by about 5 feet between the hives the other way. I know this loss of queens came about by their not being able to locate their hives, as it is the first loss we have had along this line to amount to anything since our bees have been here at this farm, which is 5 years. It has given light on one point which is worthy of note; that is, these young queens were reared by the colonies to supersede the mothers which were nearly all 3 years old last season. The bees did their own superseding. I now believe that a queen should have her head pinched off when 3 years old, unless she is a choice breeder, and even then it is a very good plan to look for failing queens at any time, and fill their places with young queens of choice stock.

In selecting a queen-bee, first, she must be prolific and the mother of industrious workers. If this colony produces the most honey and are first-class comb-builders, and gentle to handle, and winter well, there is no use to measure their tongues, but call them the best. Who sells the best queen-bees? Answer: It is not the person that handles the cells a great while before the queens are due to come out of the cells. How do you tell who sells such queens? Answer: Such queens are not prolific. As I buy a good many queens each season and introduce them into 12-frame Langstroth hives, I have a chance to know, and as Dadant has well said, "A queen must have a good size hive in order to find out if she is prolific."

To test queens for breeders: Last summer I bought a lot of leather-colored queens from one of the most noted queen-breeders in the United States, as well as golden queens from another noted queen-breeder. All these queens are wintering on the summer-stands to test hardiness, and next season will be tested carefully for honey, gentleness, etc. The best will be used for a breeder in 1909. These are what are known as American Italians. So far the best and most profitable queen I ever owned first saw the light in northern Italy.

We have just set out about 40 catalpa shade-trees in the apiary. The trees are set about 9x10 feet apart and will be kept trimmed up high enough to let the morning sun shine in on the hives, but make a nice shade in the heat of the day.

C. A. BUNCH.

St. Joseph Co., Ind., Dec. 26.

Bad Spring—Good Fall Flow.

Bees came through last spring in bad condition owing to lack of stores, the continued cold weather and lack of bloom, it having been killed by the late freezing. So bees scarcely got a living until early buckwheat began to bloom. Then they began to gain a little in stores until the first of September, when the fall weeds began to yield in good earnest so I got an average of 70 pounds of fine honey to the colony. Good for a fall flow. So the bees have gone into their winter quarters in fine condition, with 45 pounds of good, sealed stores for their share.

A. J. McBRIDE.

Mast, N. C., Nov. 4.

American Bee Journal

Poor Season—Effect of Low Grade Honey.

Acting on your suggestion for these long evenings, I thought I would write something of the way I see things in the bee-world. We have just closed a season in which many of us producers had to tie up our purse-strings early in order to make sure of having a winter's supply and take us to the season when we can again hear the happy buzz of the loaded home-coming bee.

Our past season has been a severe one all over the country with the exception of a very few favored localities, but I am sure that no bee-keeper was troubled with an over-surplus of funds after having divided up with the supply-dealers and other leakages which, in the nature of things, can not be avoided. But some say that we have the consolation that honey is selling at a high price. However, that at the present, is of no value except to stimulate one's ambition for the future. Yet how quickly will the price come down if we should have a fair crop next season with our greater number of producers who read no bee-papers, and rush their honey to the market in every possible form—good, bad, pell-mell, 4 grades in one honey-box, swelled and lean sections, sometimes stacked in the wagon-beds and soap-boxes, and sections that have been on the hives for 2 or 3 years, loaded with propolis, dark and unsightly of course. One will naturally say that honey brought to the market in that condition can never get the first-class price. Well, of course not. But what effect has that kind of honey on the market both in price and in the increase of the demand. It is true that I have had only 12 years' experience in selling honey, but I made it a business to learn the market and its tendency, with effect of quality and neatness of appearance. And I say that I could now sell 30,000 pounds of comb honey in our two cities, Argenta and Little Rock, with less trouble and labor than when I produced only 1,200 pounds. But one may think that I am the only producer tributary to this place. No, there are many, and just because of the many I have gained my experience in the effects on the market of a product that is not up to a certain standard.

The quantity of honey consumed is the real stimulant of the market; the greater the consumption the more demand there is for the article, and consequently better prices are paid. Well, there is nothing new in that, but how about increasing the consumption? We simply must place it before the people in an attractive way, and within reach of the consumers. When I first went on the market there were 5 houses that sold comb honey in our city. Now there are hundreds selling comb honey, and our whole community is now in reach of comb honey. I had to convince every grocer that he could sell comb honey as well as he could a bar of soap, and I often left a box of honey in his store against his protests, and promising that I would come after it in one or 2 weeks, assuring him that it would cost him nothing if he could not sell it, and I never had to take back a single box, and invariably took up the empty box and replaced it with a full one, and the cash would come without asking for it. Now, every grocer keeps comb honey. It is placed in reach of all, and as a rule the temptation to take a bite of the sweet morsel is hard to resist, and the result is an increased demand and a splendid market.

The small grocer on the outskirts of the city is the best customer for lower grades of honey. I have my customers, and my three grades of honey. The grocer that buys the 12½-cent grade flatters himself that he can undersell his bigger competitor. I have customers that say they want the 16-cent grade, others want the 15-cent grade, and others will have nothing but the 12½-cent.

I mentioned something of the effects of a low grade of honey on the market, or on the consumers. I have always noticed that the grocers who bought a low-grade honey had trouble to dispose of it. His customers complained, and in many cases he lost them. This makes it very unpleasant, and what raking the producer gets when he comes back to his grocer. His honey may be dark, may be bitter, may be what is called "honey-dew," and the producer may know all about the defects of his honey, yet will offer to sell it as a prime article, write the name on the box, "Fancy," put a few sections of fair honey on the glass end of the box, with no other desire than to get it off his hands, which is deception and dishonesty.

No later than last spring several thousand pounds of so-called "Fancy" honey were shipped to our market just before our honey was ready for market. This honey in appearance was splendid, but it was the rankest kind of white outside, black inside, well-filled sections of honey-dew I ever saw. A number

of my customers had a supply of it and have it yet. Some of them put some in a wagon to get rid of it. One of my customers who bought 800 pounds of me the season before, bought 100 pounds of this white outside, black inside honey a few days before I went to him June 12th. He said, "I had given you up and thought you were not on the market this season, and I bought some honey of a commission man, and they nearly all bring it back," and he reached behind the counter and brought out a section of this white outside and black inside honey. I told him to put in some of my clear honey or he would lose all his customers, and sell his black honey only to customers who call for it, and the result was the last week of November he had 3 boxes of his black honey left. He sold only 200 pounds of my honey, and 24 pounds of black honey, whereas last year he sold 800 pounds of my honey. The case of this merchant was the rule with all who bought this dark honey, and for a while it was hard to sell honey, and only late this fall had the effects disappeared. Honey of a low grade should never be put on the market, and should be used for no other purpose than to make bees. It is valuable for that purpose only, and ought never to go on the market, because of its demoralizing effect and its deceptions.

I would like to ask a question, which is this: Is there any bee-man anywhere that will eat a section of white on the outside and black inside honey in preference to one of a clear and fine flavored one? Let all those that are in favor of white outside, black inside honey, make it manifest by saying, "Aye." I am sure that there will be a light vote on this side of the subject. And I do hope that the disposition to feed others on something that one won't eat himself will also rapidly lessen; and do unto others as you wish others to do unto you. A BEE-KEEPER FROM ARKANSAS.

Comb and Extracted Honey from Same Super—Maple Honey.

I am, as you might say, only a beginner in the apicultural field, having had bees 3 years. But they are my sole study, and have been ever since I had them. And I studied "A B C of Bee Culture" before I had a bee.

I will speak principally of the sectional hive and the production of comb honey, or the production of comb and extracted honey from the same super.

Last spring E. D. Townsend wrote an article for one of the bee-papers, about comb and extracted honey from the same super. And I agree with him. I worked on his principle. Only I used it mostly with the 8-frame Wisconsin hive. However, I think I will adopt the sectional hive another year altogether. It is so much easier and handier to manipulate.

If you have any light or medium light colonies before the honey-flow, how easy it is to take a section from some strong colony that is boiling over with bees and place on the light one. For a strong colony that came out of the cellar in good condition will have 3 sections of a sectional hive full, or nearly full, of brood before clover blossoms, and a very good queen will have some in the fourth section if there hasn't been much honey coming in so that the top section of the hive is pretty well filled.

In my locality I get a good flow from soft and hard maple, willow, dandelion, and wild cherry, just in time to make brood-rearing go on a-booming, and last spring I got quite a lot of surplus from that same source. And part of the people that I sold to liked the maple honey better than clover. But I am running away from my comb and extracted honey from the same super.

Now, this spring flow I have is a fine thing to get nice, little combs drawn out in the supers by which to work this plan of comb and extracted from the same super. And if you have some of those little frames filled with honey from maple, it can be extracted if a person wants nice white clover when the clover flow comes, and the empty combs can be put one on each side of the super and the center filled with sections for comb honey, and you will get nice, well-filled white sections. They will start to store in the combs that are all ready for them in the little frames on the outside of the super where usually is the last place that work will be done if the super is filled with sections. But with this plan you can extract the honey out of these frames, and you have a lot of nice sections, too, and scarcely any that are not finished, unless it is a few the last of the flow. In this way I think it better even for extracted honey with the shallow frames, as you can give the bees room as they need it without giving them a great, deep super that is a great many times more room than they need, especially with

light-colored colonies; and it will give more honey, extracted or comb, to the apiarist than any other super, even on a deep brood-nest.

But I think the sectional hive far outstrips anything in the bee-hive line in regard to swarming, too, as it can be manipulated so easily. If you want to look for queen-cells blow in a little smoke at the entrance and raise up the second section, and if there are any cells you are pretty sure to see them on the lower part of the frame. If the bees are getting their hive pretty full of brood, give them another empty section between the 2 brood-sections, with foundation, if you need any more combs, and it will soon be drawn out into nice white combs and filled with eggs by the queen.

Irma, Wis., Dec. 21.

V. A. GOODNOW.



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Each issue is very fully illustrated. The covers are done by the finest engravers in Chicago, and our writers are the best in the land. Besides dozens of writers of prominence whose names we can't even mention for lack of space, we have such men as Dr. E. F. Phillips, U. S. Dept. of Agriculture; Dr. Edward F. Bigelow, Associate Editor St. Nicholas; F. Dundas Todd, former Editor Photo-Beacon; Allen Latham, Connecticut; etc.

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At Root's Factory Prices

Honey and Beeswax

CHICAGO, Feb. 4.—The market is unsatisfactory. The stocks are quite large of both comb and extracted, and prices are continually receding. We are, however, hoping that this month will bring a demand that will help clean up consignments that have accumulated. The top price for white grades of comb is 16c; off grades are anywhere from 1 to 5c less. There is a demand for basswood and white clover extracted at 9c per pound, but other grades are more difficult to place at from one-half to a cent less. Amber grades range from 6 to 7c. Beeswax 28c. R. A. BURNETT & CO.

DENVER, Jan. 15.—The local demand for comb honey is light at present, and we do not expect much improvement in the near future. We quote No. 1 white, per case of 24 sections \$3.25 to \$3.50; light amber and No. 2, \$2.75 to \$3.00. We now have a good stock of very fine extracted honey which we offer at 9 to 10c for strictly white alfalfa; light amber 8 to 9c; strained amber honey 6 3/4 to 7 1/2c. We are paying 22 to 24c for clean yellow beeswax.

THE COLO. HONEY-PRODUCERS' ASS'N.

CINCINNATI, Jan. 13.—There is absolutely no demand for either extracted or comb honey at this writing. Lower prices would be no inducement to the buyers, and a waiting game must be played until the trade calls for this commodity. We offer amber extracted honey in barrels at from 6 to 7 1/2c; fancy table honey from 9 to 10c in 60 lb. cans. Fancy comb honey 16 to 18c. The above are our selling prices. We are paying 28c per pound cash and 30c in trade for good to choice yellow beeswax free from dirt, delivered here. THE FRED W. MUTH CO.

KANSAS CITY, Mo., Feb. 4.—Receipts comb honey are more liberal, and prices lower. The demand is light for both comb and extracted. We quote: No. 1 white comb, 24-section cases, \$3.00 to \$3.10; No. 2 and amber \$2.75 per case; extracted, white, 8 to 8 1/2c; amber, 7 to 7 1/2c. Beeswax, 25c. C. C. CLEMONS & CO.

NEW YORK, Feb. 5.—There is but very little demand for comb honey, and that for fancy grades only. While there is no overstock there is sufficient supply to meet all demands, if not more. Off grades of white honey dark and mixed are neglected and

very little call for. We quote: Fancy white 15c; No. 1 white, 14c. Off grades and dark, 10 to 12c, according to quality. The demand is fair for nearly all grades of extracted honey, but receipts are quite large and prices are somewhat declining. We quote: White sage, 8 1/2 to 9c; light amber, 7 1/2 to 8c; dark, 6 1/2 to 7c. Beeswax market is very dull—very little demand—but prices declining. We quote from 28 to 30c, according to quality. HILDRETH & SEGELKEN.

PHILADELPHIA, Feb. 3.—Sales of honey have been quite active in this market. We quote: Fancy comb honey, wholesale, 17 1/2 to 18 1/2c; No. 1 white, 16 to 17c; amber, 14 1/2c; extracted honey, water-white, 9 to 9 1/2c; amber, 8c; dark, 7 1/2c. Beeswax, 30c. We are producers of honey and do not handle on commission. WM. A. SELSER.

TOLEDO, Feb. 4.—There is practically little change in the honey market, owing to the hard times. Fancy comb honey sells very slow at 17c; dark grades 15 to 16c, in a retail way. Extracted, fancy white, in 60-lb. cans, brings 9c, with no demand for darker grades. Beeswax, 26 to 28c. GRIGGS BROS. & NICHOLS CO.

CINCINNATI, Feb. 4.—The market on comb honey is exceedingly slow. Prices are no inducement to force sales. No. 1 white comb honey is selling slow; retail 16c. The market on extracted for manufacturing purposes is slow, ranging from 6 to 6 1/2c in barrels. No white clover to offer. White sage is 9 1/2 and 10c. Beeswax, fair demand at 32c. C. H. W. WEBER.

INDIANAPOLIS, Feb. 4.—Demand for best grade of extracted honey is good, while the demand for comb honey is not brisk. Bottled honey in retail groceries is selling slowly, for two reasons—dull times, and also from the fact that some bottlers have been putting out a very inferior grade of honey. Jobbers are offering the following prices, delivered here: No. 1 and fancy comb, 16 to 17c, net weight; extracted white clover, 9 to 10c; amber honey in barrels, 6 to 6 1/2c. Beeswax 28c cash, or 30c in exchange for merchandise. WALTER S. POWDER.

HONEY AND BEESWAX

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American Bee Journal

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